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RAILWAY AGE

ANNUAL REVIEW AND OUTLOOK NUMBER

JANUARY 12, 1953

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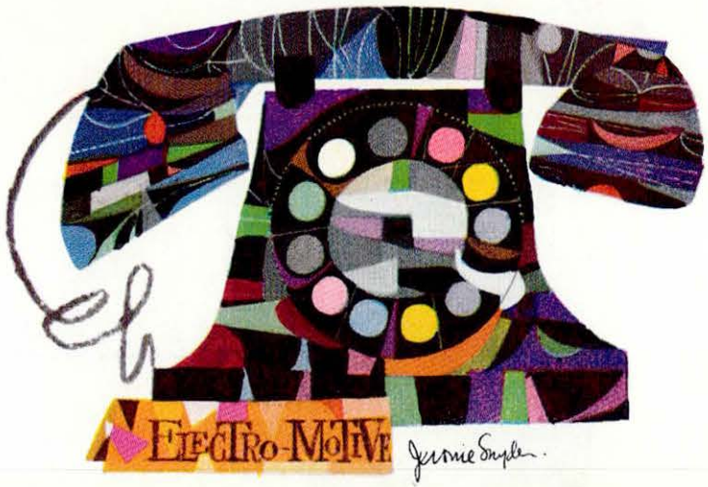
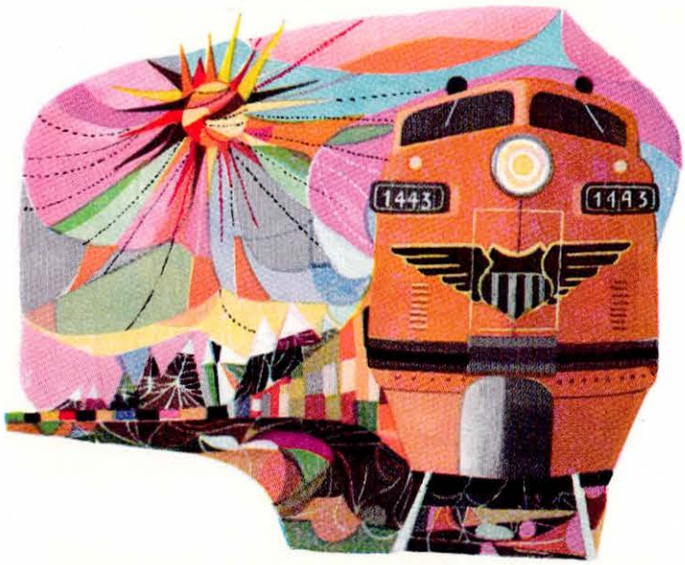


and ordering "Unit Exchange" components from Electro-Motive

means that locomotives spend less time in shop



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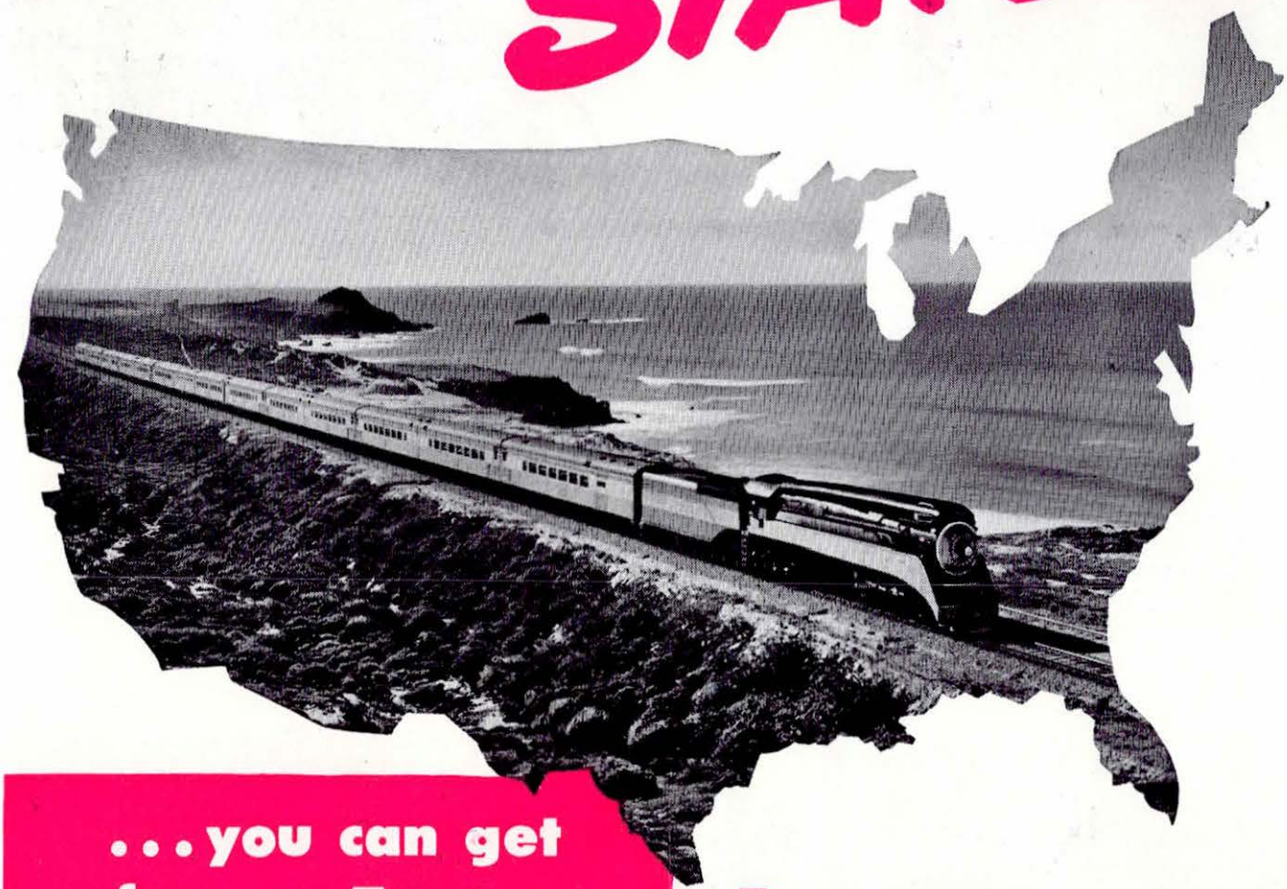

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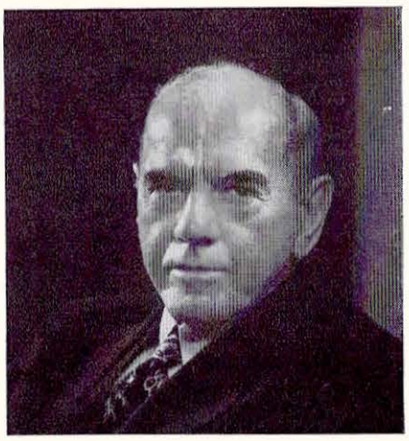
The Road Ahead



E. G. Grace

The year 1952, now drawing to a close, has been one of crisis and decision for the nation and for the steel industry.

Last month's elections confirmed which way we have turned. They marked the end of an era and the beginning of a new one which it is reasonable to believe holds forth brighter hopes for all of us.

No sensible person thinks that the decision of November 4 provides an automatic solution for all of our problems and difficulties. Some of these difficulties stem from our long inflationary spree. Putting an end to that spree and regaining solid economic health may impose some stresses and strains. It will call for self-discipline and broad understanding in all walks of life.

This does not imply any turning back of the clock, nor any retreat from the high standard of living we have managed to achieve in the face of great odds.

We must concede, however, that there are serious obstacles to be overcome. We must stop inflation. We must reduce taxes. We must balance our budget.

We live in uncertain times and much that we must do is determined by the actions of powers hostile to the free world. Regardless of whether our problems are internal, external, or a combination of both, we now have a chance to face up to them in more effective ways.

Beginning a Constructive Era

Industry now can reasonably expect that it can conduct business in an atmosphere of understanding and mutual cooperation. Our energies can properly be expended on the job of production and distribution, and not dissipated through fighting a rear-guard action to prevent being absorbed by the Federal octopus. We are launched on an era of constructive progress. The real progressives of our time are those who have faith in a free economy and a free state.

Here at Bethlehem, we have that faith. We enter the new era with our physical properties intact and with our competitive position greatly strengthened. Our plants have been expanded and our expansion has been to an integrated plan. We are ready for and confident of our place in that freer future.

New-Found Unity

At the beginning of this new era the hope must be that the conflicts engendered in the old will give way to a new spirit of cooperation, fair play and mutual endeavor. The United States emerged from a hard-fought election contest as a united nation—perhaps more united than it has been since we closed ranks after Pearl Harbor.

Let us take full advantage of that new-found unity. Let management, employees and their authorized representatives, together with all other elements of the nation, get on with the job of making an ever-growing and sounder America.

E. G. Grace

CHAIRMAN, BETHLEHEM STEEL COMPANY

BETHLEHEM STEEL COMPANY, Bethlehem, Pa.

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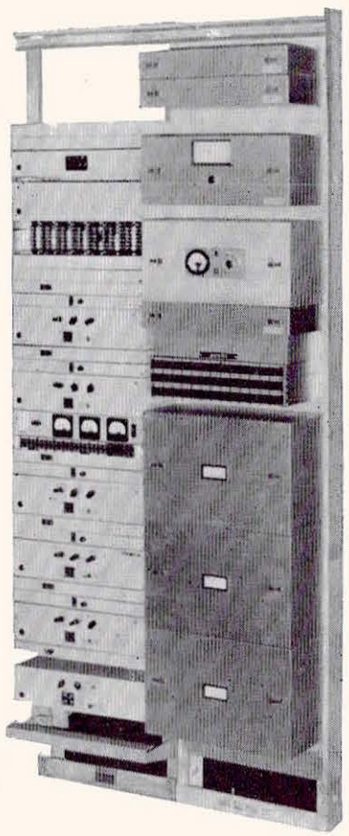

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Vol. 134, No. 2 January 12, 1953

RAILWAY AGE

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Railway Signaling & Communications Car Builders' Cyclopedia Locomotive Cyclopedia
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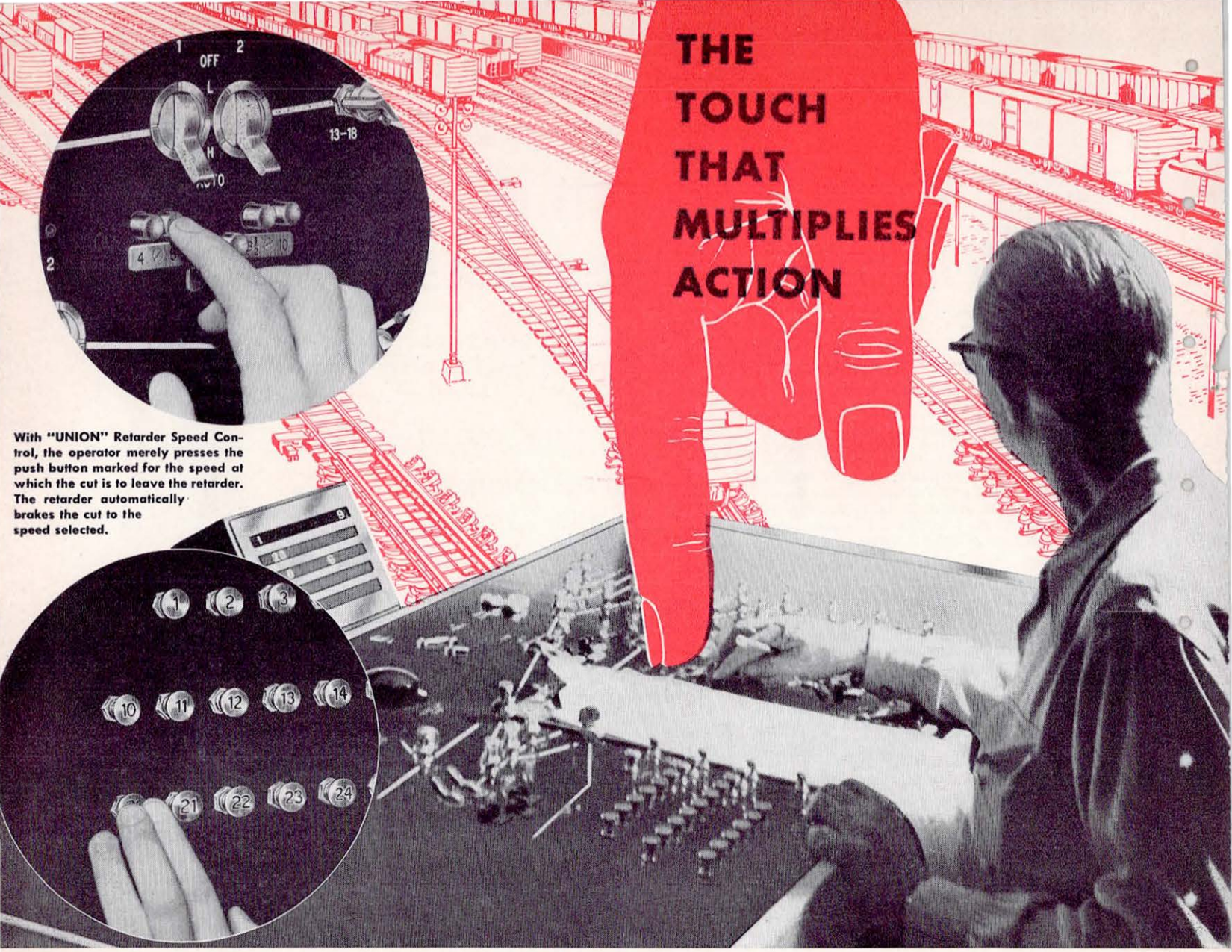

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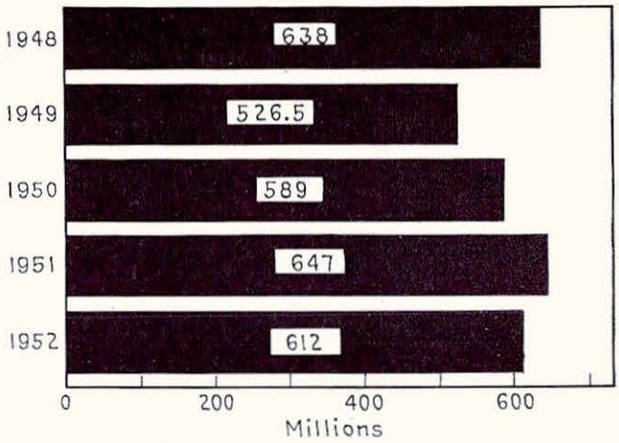
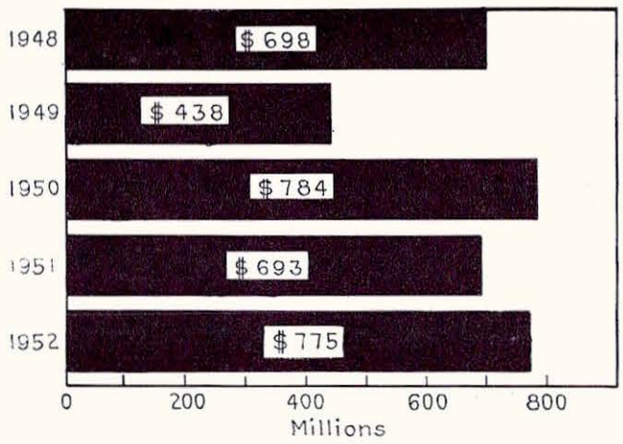
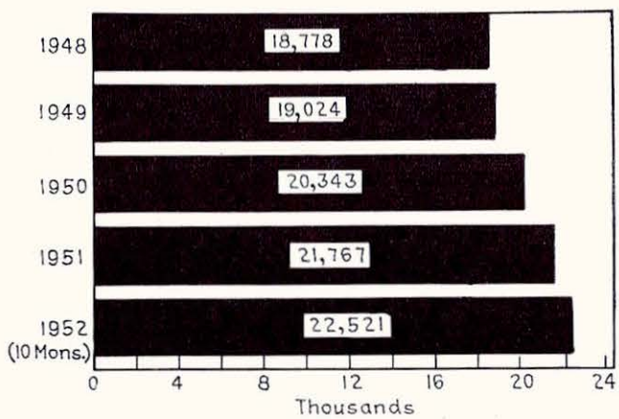
1952 AT A GLANCE



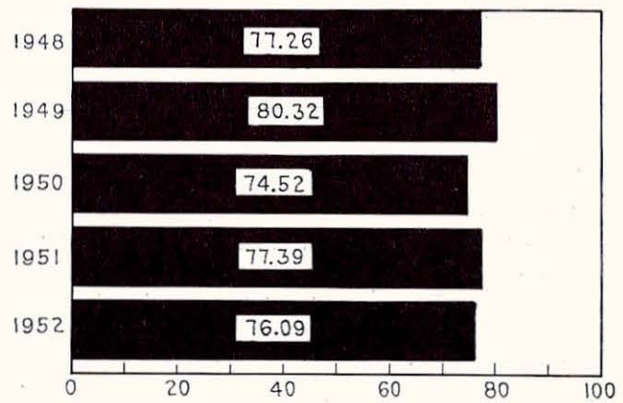
1 **REVENUE TON-MILES handled by Class I railroads in 1952 show that freight traffic was smaller than in 1951. Passenger traffic, too, was a little lower. Yet . . .**



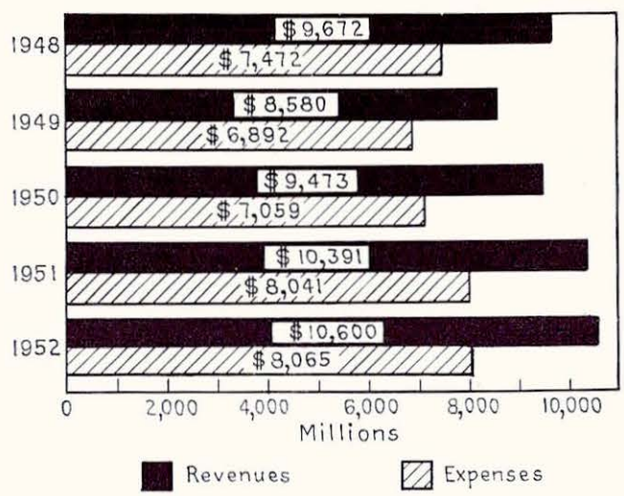
2 **NET INCOME, after all charges, was almost up to the postwar peak reached in 1950. This seemingly contradictory result came about because the railroads handled more . . .**



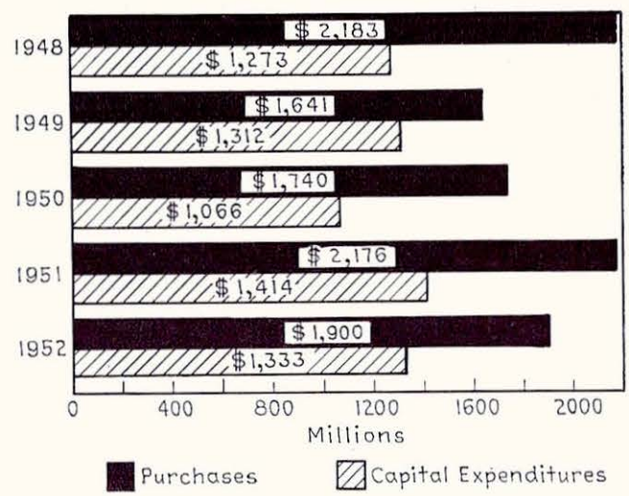
3 **NET TON-MILES PER FREIGHT-TRAIN-HOUR, and recorded improvement in other indicators of operating efficiency. So their overall . . .**



4 **OPERATING RATIO was lower than in any except one of the four preceding years. This, in turn, made it possible for them to hold their . . .**



5 **OPERATING EXPENSES at about 1951 levels, while taking in larger GROSS OPERATING REVENUES from the higher freight rates in effect during the year. Consequently, their . . .**



6 **PURCHASES and their CAPITAL EXPENDITURES—designed to produce still greater gains in efficiency — remained at near-record levels, despite material shortages.**

PROSPECTS FOR 1953

In General . . .

"The railroad outlook for 1953 is, as usual, a mixed and somewhat uncertain one. . . . Total operating revenues will depend on traffic volumes experienced and on continuation of or adjustments in existing rate and fare levels. Operating expenses will follow the revenue trend, modified by economies still to be realized from dieselization and other improved mehods and facilities and by price and wage trends. . . . The prospect for increased net earnings in 1953 appears none too clear. . . . Too much optimism over the improved earnings of a single year, such as 1952, should be tempered by consideration that any recession in economic activity would immediately be felt by the railroads. . . . It is hoped that definite steps may be taken, in 1953, toward modification of public transportation policies. . . . If these efforts are reasonably successful, considerable progress will have been made toward assuring a sound and healthy future for railroad transport in the United States."—*Dr. Julius H. Parmelee.*

More Specifically . . .

This year's outlays for **capital expenditures** for equipment and fixed facilities should aggregate about $1\frac{1}{3}$ billion, or slightly more. That would keep them on about the 1952 level, which was the second highest annual total on record. The 1953 equipment program appears to be on a $970-million basis, while the road program approaches $400 million. Improved earnings and materials situations are factors favorable to the carrying out of these programs as now projected.

Purchases of materials and supplies are, normally, closely related to traffic levels. Most signs point to 1953 as a better year, freight traffic-wise, than was 1952. This, coupled with relatively favorable 1952 earnings, probably will mean some increase in purchases in 1953. Unless the traffic increase is substantial, however, the largest increases are likely to be for rail, freight cars, signal and communications equipment, and more efficient machines for performing paperwork and maintenance-of-way.

The controlling factor in **freight-car** orders throughout 1953 (and 1954) will probably be the speed with which material supplies permit the filling of existing and future orders. The railroads' November reaffirmation of their 1950 pledge to build up their serviceable freight-car fleet to 1,850,000 units by the end of 1954 leaves them with no other possible course than to order cars as fast of they can be delivered—up, at least, to a maximum of 10,000 new cars per month. The real question is not one of orders, but of availability of material with which to fill those orders.

As to **maintenance of way**, estimates based on figures received from most Class I roads indicate that they are planning to lay 1.6 million net tons of new rail in 1953, an increase of 550,000 tons, or 52 per cent, compared with 1952. The extent to which the roads will be able to carry out their projected rail-renewal programs will be determined by the ability of the mills to make deliveries of the new steel. Tie-renewal programs of these same roads call for insertion of an estimated 31 million new crossties in 1953, an increase of 1.5 million, or 5.1 per cent, compared with 1952.

The volume of new **signaling** to be installed in 1953 should be just as big, or bigger, than last year, provided only that the railroads can get enough men to do the work and manufacturers can supply equipment. Prospects are good for continued growth of new **communications** facilities on railroads in 1953.

Nearly all signs point toward continuation of the present high level of railway **construction** activity in North America. These "bullish" influences include:

- An estimated "carry-over" of almost $300,000,000, previously authorized for work not yet completed, assures a big start.
- Class I roads estimate they will make gross capital expenditures for road betterments of $82,018,000 during the first quarter of 1953. This compares with $73,870,000 spent in the same period in 1952.
- The Defense Transportation Administration has authorized allotment of controlled materials for 116 projects amounting to $39,697,701. Although some of these involve other transportation agencies, railway track extensions and relocation work led all types of projects approved.
- Relatively high net income in 1952 (attributable in part to higher efficiency resulting from recent capital expenditures—both road and equipment) is expected to continue in 1953, and thereby spawn more capital expenditures.

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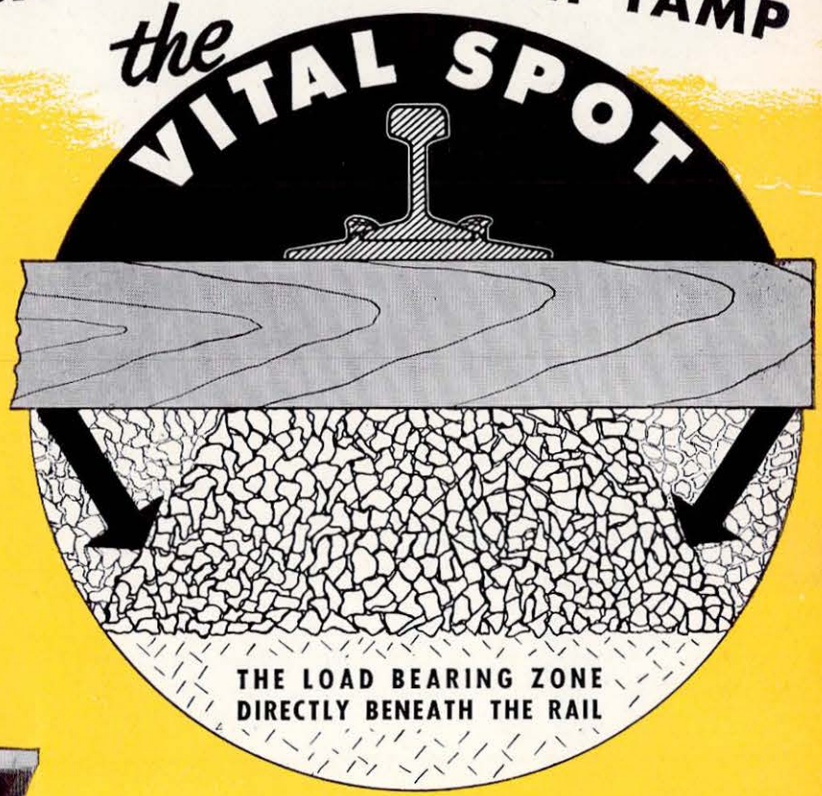

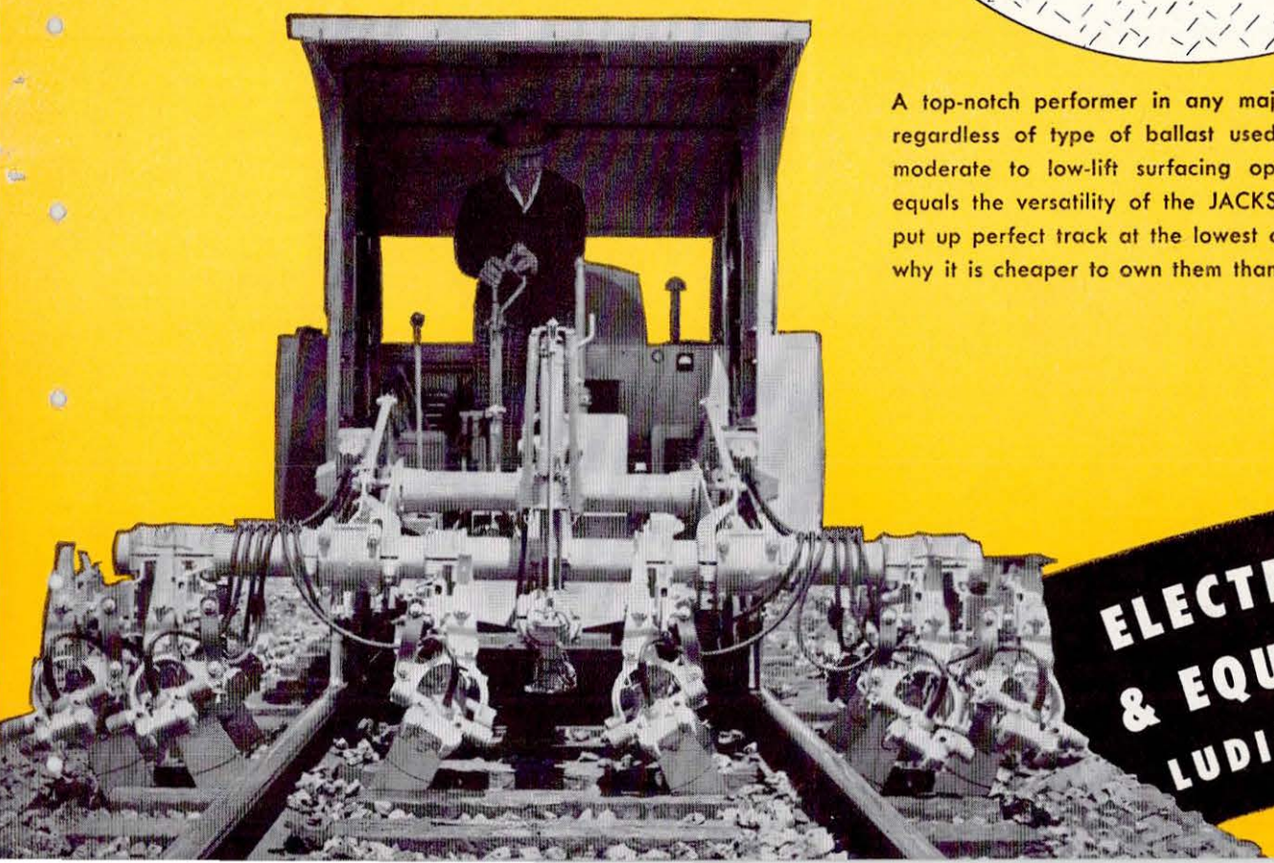

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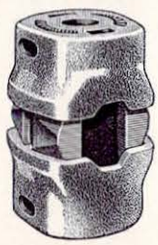

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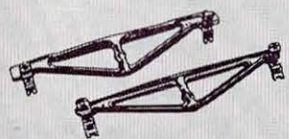
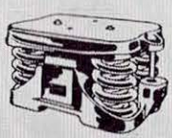


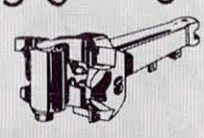
Cast Steel Brake Beams

Ride-Control Trucks



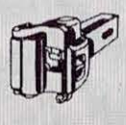
Ride-Control Packages

Simplex Snubbers

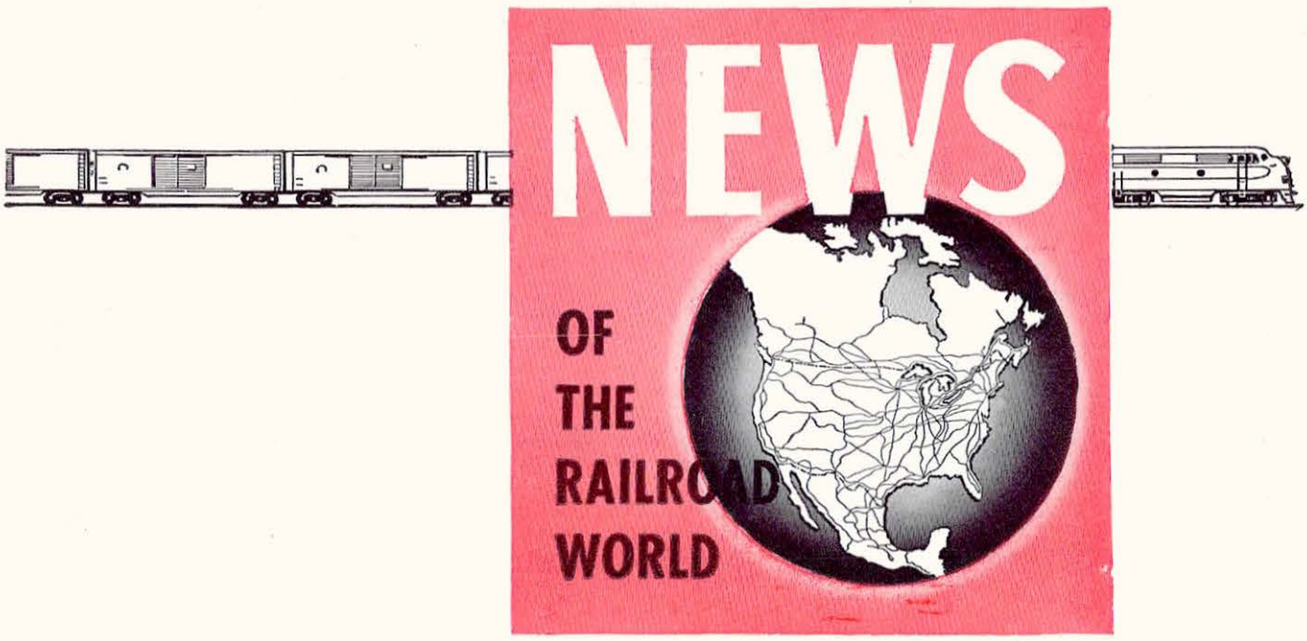


Type E Couplers

Type F Couplers



Tightlock Couplers



Planning Future of Transport Industry Not a Duty of Congress, Sen. Johnson Warns

The industry must offer a unified declaration of policy and specific legislation, he tells economics group

"It is not the responsibility of Congress to formulate policy objectives which will preserve and build the transportation industry. Rather it is the responsibility of that industry, which includes all forms of transportation—railroads, trucks, buses, waterways, air lines, pipelines, etc.—to chart its own course and then present it to Congress for acceptance or rejection—unless, of course, the industry wants Capitol Hill to dictate its policies and formulate and guide its future."

So said Senator Edwin C. Johnson, former chairman of the Senate Interstate and Foreign Commerce Committee, in a talk prepared for presentation before the transportation and public utilities section of the American Economics Association in Chicago on December 28.

Why Policy Failed

Senator Johnson said that the national transportation policy had failed of attainment because of the direct and indirect effect of the granting of subsidies and because of "promotional activities of the federal government, which have often operated to prevent sound economic conditions."

As examples, he cited the facts that:

"When the Department of the Army, through its Corps of Engineers, plans an expensive waterway improvement project and does not consider other competing forms of transportation; when airport and airway development programs of the Civil Aeronautics Administration, and the subsidy program of the Civil Aeronautics Board, are carried on without regard to the possibility that the revenues of competing carriers may be dangerously impaired; and when the government spends billions in providing certain transportation facilities without establishing a consistent policy regarding payment for use of such facilities, then the commerce of the United States, the postal service and the national defense, must suffer irreparable damage.

"Speak Up!"

"If and when the transportation industry formulates a national policy and decides to recommend to Congress the continuance, elimination, or modification of subsidies, then it behooves it to suggest legislative changes which would amend the present national policy so as to make its provisions applicable to all agencies of the federal government engaged in regulating or promoting any form of transportation.

"For many decades the democratic system of government has contended that free competition will provide the greatest reward to the greatest number of people and I know of no one in the transportation field who desires to change this system. But it is essential that an 'esprit de corps' within the industry be developed so that Congress can be presented with a unified declaration of national policy which is broad enough and clear enough to satisfy the needs of the industry and to develop and preserve a healthy, well-balanced national transportation system.

"If the aspiration of the industry is to remain strong and productive, it must speak up in a voice which will be heard."

1952 WAS SAFEST YEAR FOR RAILROAD TRAVEL

When complete accident statistics for 1952 become available they are expected to show that it was the safest year on record for railroad travel.

It was the first year in which no passenger was killed in "train" accidents, which are accidents (mostly collisions and derailments) resulting in damage of $325 or more to railway property. Last year's passenger fatalities in "train-service" accidents (12 for the first 10 months) were expected to make the year's fatality rate something like 0.04 per 100 million passenger-miles, the lowest on record.

On that basis, the railroads in 1952 would have been 10 times as safe as the air lines. The latter's 1952 fatality rate was 0.4 per 100 million passenger-miles, according to the year-end statement issued by Charles F. Horne, administrator of the Civil Aeronautics Administration.

9,000-Car Monthly Output Is About Here, O.D.M. Says

Production of new freight cars "is expected to rise during the first half of 1953, approaching 9,000 per month by June," according to the eighth quarterly report of the director of defense mobilization which went to President Truman on January 1.

O.D.M. Director Henry H. Fowler made this prediction after having recalled that the freight car program "was aimed in early 1951 at 10,000 per month." The failure to approach that goal was due to "insufficient supplies of steel of needed types," Mr. Fowler also said. And he went on to note that "only 96,000 cars were built in 1951 and 75,000 in 1952."

His further comment on the railroad situation included the following: "The requirements of partial mobilization for rail transportation have been met by the existing facilities without unusual difficulty. Nonetheless, steps have been taken toward modernizing the railroads in readiness for the possible requirements of full mobilization. This program has emphasized the enlargement of the rail freight car fleet and the replacement of over-age cars, the continuing conversion from steam to diesel locomotives, and modernization of road and terminal facilities."

Meanwhile, Mr. Fowler's prediction as to highways was that "steel supply in 1953 should permit a record level of construction for the nation's highway system."

In other sections of his report, he said that production and distribution controls can now be "steadily relaxed"; and that "further relaxation" of the Controlled Materials Plan is in the offing. At the same time, Mr. Fowler advised that "authority for priorities and allocations needs to be retained."

R.F.C.'s $1 Million Claim Dismissed by the I.C.C.

The Interstate Commerce Commission has dismissed rate complaints whereby the federal government's Reconstruction Finance Corporation sought to obtain from the railroads reparation payments aggregating about $1,138,000.

The complaints were embraced in a proceeding docketed as No. 29946. One of them, seeking reparations of about $873,000, assailed carload rates on shipments of aluminum ingots which were made between December 30, 1941, and November 15, 1945, from points in Quebec to points in Official territory and Shrewsbury, Mo., Alcoa, Tenn., and Listerhill, Ala. Another, seeking reparations of about $265,000, assailed carload rates on like shipments made between January 30, 1942, and December 31, 1946, from Bethleham, Pa., Chicago and New Haven, Conn., to points in Official territory; from Chicago to Manitowoc, Wis., Alcoa and Listerhill; and from Bethlehem to Listerhill.

The complaints were based generally on contentions that the loading of the R.F.C. shipments to carload weights in excess of 80,000 lb. entitled the government agency to an alternative basis of rates lower than the basis published at the time the shipments were made. Meanwhile, the complaints did not assail the published rates and ratings and minima.

In dismissing the complaints, the commission recalled its previous pronouncements to the effect that it "would not prescribe alternative rates and minima in the absence of a showing of a general commercial necessity or desirability for such an adjustment." The report then added:

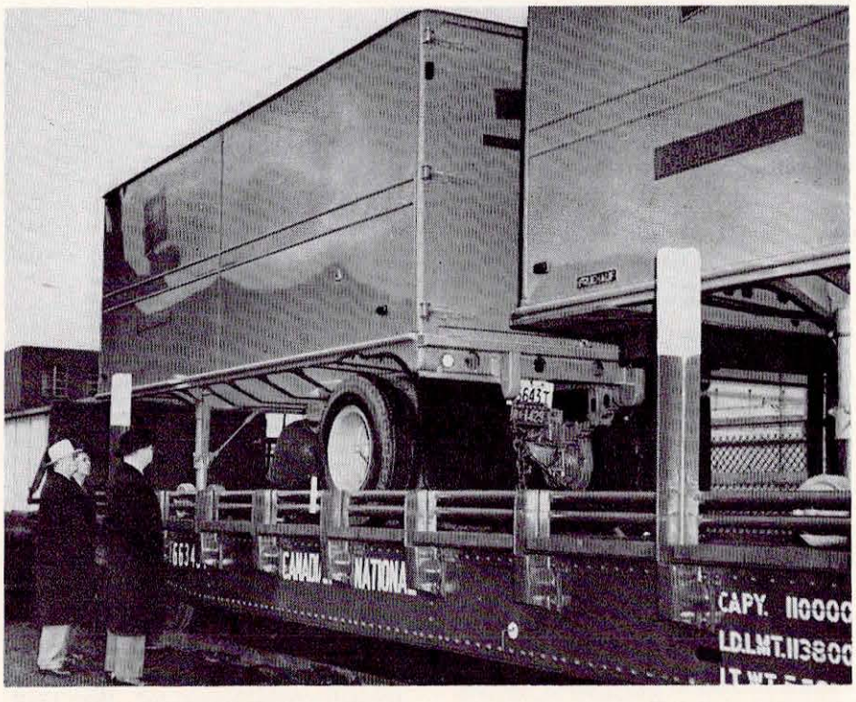
"We have seldom required carriers to publish alternative minima. In most instances where such minima were approved or prescribed, they were needed because of the different transportation characteristics of two or more types of the same product, to attract tonnage which would not otherwise move, or to meet the competition of other forms of transportation without undue sacrifice of carriers' revenue. . . . The failure to maintain dual bases of rates has been found unlawful only where it was shown that special circumstances and conditions reasonably required that such bases be maintained. . . ."

The commission's determination was a 7-to-3 decision. Chairman Alldredge filed a dissenting expression to which Commissioners Mahaffie and Arpaia subscribed, while Commissioner Splawn did not participate.

Mr. Alldredge said that the railroads involved had a variety of rates on aluminum ingots in effect when the R.F.C. shipments moved. As he read it, the majority report held, "in substance and effect, that rates on aluminum ingots, loading 80,000 lb. or more per car, which range all the way from 27½ to 53½ per cent of first class . . . are just and reasonable.

"Such a result," the dissenting commissioner added, "does not square with common sense. The zone of reasonableness cannot be that wide on a commodity like aluminum ingots. . . . Thirty-five per cent of first class represents the maximum which I would permit to be charged and retained by defendants on the shipments here in question."

The R.F.C.'s reparation claims were based on contentions that the rates should have been 30 per cent of first class.



THE YEAR 1953 probably will see considerable expansion of "trailer-on-flatcar" service in the United States. Canadian railroads began such service in December between Montreal and Toronto.

CNJ Absorbs CofP

Effective with the end of 1952, lines of railroad in Pennsylvania formerly operated by the Central of Pennsylvania will be operated by the Central of New Jersey under lease, and will be designated as the Pennsylvania division of the CNJ, E. T. Moore, president of the Jersey Central Lines, announced December 31, 1952.

All officers and employees of the CofP will become employees of the

CNJ without change in seniority, rules, rates of pay, working conditions or other terms of employment, Mr. Moore said, and all assets and liabilities of the CofP will be taken over by the CNJ.

He added that the Central of Pennsylvania will be continued as a separate corporation owning a branch line connecting with the main tracks of the CNJ's Pennsylvania division at E&W Junction, 4.38 miles west of Easton, and that this branch will be leased to and operated by the CNJ as a part of its Pennsylvania division (*Railway Age*, December 22, 1952, page 54).

American U. to Hold 5th Transport Institute

The fifth annual "Institute of Industrial Transportation and Traffic Management" of the American University, Washington, D.C., will be held January 13-30. As in previous years, the institute will be directed by L. M. Homberger, professor of transportation at the university.

Freight Car Loadings

Car loadings for the week ended January 3 were not available when this issue went to press.

Loadings of revenue freight in the week ended December 27, 1952, which included the Christmas holiday, totaled 520,671 cars. This was an increase of 18,663 cars, or 3.7 per cent, above the corresponding week in 1951, but a decrease of 81,736 cars, or 13.6 per cent, below the corresponding week in 1950.

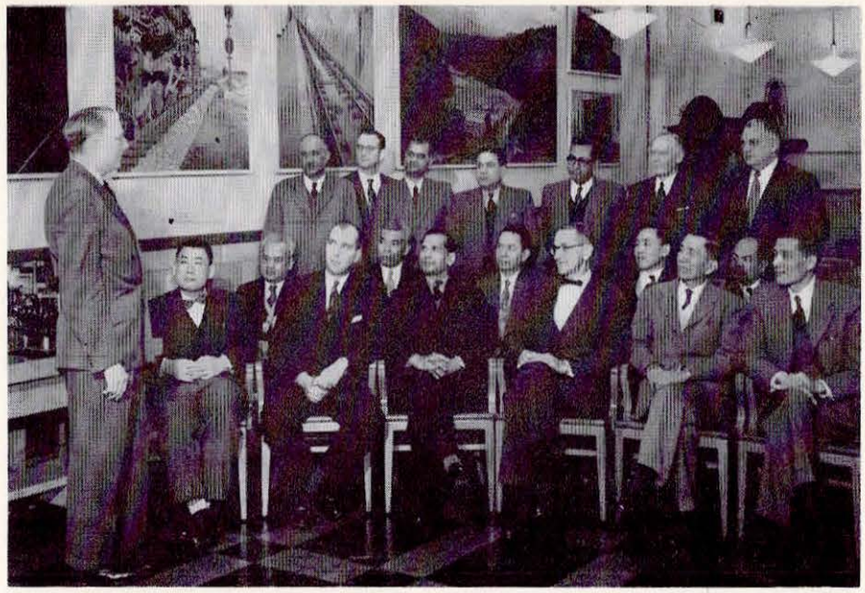
Loadings of revenue freight for the week ended December 20, 1952, totaled 710,358 cars; the summary for that week, compiled by the Car Service Division of the Association of American Railroads, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, December 20

District	1952	1951	1950
Eastern	121,714	112,177	136,165
Allegheny	145,193	134,355	151,760
Pocahontas	55,843	54,859	55,244
Southern	132,265	123,050	132,561
Northwestern	77,499	71,592	79,881
Central Western	118,919	116,897	127,305
Southwestern	58,925	58,432	64,273
Total Western Districts	255,343	246,921	271,459
Total All Roads.	710,358	671,362	747,189
Commodities:			
Grain and grain products	44,668	44,319	52,741
Livestock	8,400	8,554	8,876
Coal	141,813	149,781	152,437
Coke	15,201	16,695	16,128
Forest products	47,128	40,691	49,522
Ore	20,517	14,681	13,798
Merchandise l.c.l.	68,394	64,592	78,279
Miscellaneous	364,237	332,049	375,408
December 20	710,358	671,362	747,189
December 13	721,252	753,194	773,131
December 6	719,159	773,530	766,895
November 29	670,167	821,776	740,165
November 22	810,922	711,447	701,551
Cumulative total 51 weeks	37,462,757	39,997,174	38,300,234

In Canada.—Carloadings for the seven-day period ended December 14 totaled 78,862 cars, compared with 83,947 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada: December 14, 1952	78,862	30,616
Cumulative Totals December 14, 1952	3,996,271	1,681,879



A. M. WIGGINS (left), vice-president and general manager of the Union Switch & Signal Division of the Westinghouse Air Brake Company, addresses a group of foreign railroad technicians in the demonstration room of the firm's Swissvale, Pa., plant. The group, sponsored by the United Nations Technical Assistance Administration, toured the Pittsburgh area last month under direction of William R. Triem, former general superintendent, telegraph, of the Pennsylvania.

40 Million Cars Loaded In 1952; 6.2% Under '51

Loading of revenue freight on American railroads totaled 37,983,428 cars in 1952, according to the Association of American Railroads. This was a decrease of 2,515,754 cars, or 6.2 per cent, compared with 1951.

"American railroads in 1952 operated with all-time record efficiency," the A.A.R. said. "Establishing new records in train speeds, the average freight train achieved a record transportation output equivalent to moving more than 22,500 tons of freight one mile in an hour. This was nearly 28 per cent above the peak output of the years of World War II and three times as much as it was 30 years ago."

The 1952 and 1951 loadings by commodity groups are compared in the accompanying table.

	1952	1951	Per cent Decrease
Grain and grain products	2,568,517	2,587,566	0.7
Livestock	492,507	496,860	0.9
Coal	6,719,305	7,503,179	10.4
Coke	673,198	837,913	19.7
Forest products	2,270,283	2,363,404	3.9
Ore	2,653,018	3,004,014	11.7
Merchandise L.C.L.	3,695,051	3,866,252	4.4
Miscellaneous	18,911,549	19,839,994	4.7
TOTAL	37,983,428	40,499,182	6.2

GENERAL MOTORS TO BUILD DIESEL UNIT FOR "TRAIN X"

"General Motors Corporation has agreed to design and build, at its expense, the diesel locomotive for 'Train X,'" Walter J. Tuohy, president of the Chesapeake & Ohio, said in a recent address before the Cleveland Society of Security Analysts.

"The deficit from passenger-train operations is preeminently an industry problem," Mr. Tuohy told the analysts. "One avenue for major cost reduction lies in the development of new lightweight passenger equipment, cheaper to build and less costly to operate. . . . We have taken the attitude that as long as we have passenger trains we must have excellent trains and service, yet reduce capital and operating costs. We believe 'Train X' can help answer that problem. The development is progressing very satisfactorily."

D.T.A. "Census" Reports 1950 Truck Ownership

The Defense Transport Administration has published a 1950 "census" of revenue vehicles owned and operated by Class I motor carriers of property.

Reports filed with the Interstate Commerce Commission in 1950 indicate the motor carriers of property then owned 114,662 trucks and truck-tractors, and leased an additional 35,546 units. These carriers also owned 114,041 semi-trailers and 4,958 full trailers, D.T.A. reported.

D.T.A.'s census lists vehicles by year,

model, type of service of vehicle, body type and vehicle weight. The study was based on reports from 2,027 carriers, common and contract.

Six Months' Claim Bill Tops That of 1951 Period

Claims, paid by 117 U. S. and Canadian members of the Association of American Railroads for freight loss and damage during the first six months of 1952, topped the total of either six-month period of 1951. In terms of dollars, the roads paid out $53.7 million in the first half of 1952, whereas the figures for the first and second halves of 1951 were $46.8 million and $53.3 million, respectively.

The ratio of loss and damage to freight revenue for the first six months of 1952 came to 1.27 per cent, as compared to 1.10 and 1.21 per cent, respectively, for the first and second halves of 1951. Unlocated damage to freight in packages accounted for virtually 40 per cent of the total claim bill in the 1952 period. Concealed damage accounted for another 11.6 per cent. Loss —unlocated, theft and concealed— accounted for 12.6 per cent. The summary has been released by the A.A.R.'s Freight Claim Division and includes the usual breakdown of claim causes by commodities in both carload and l.c.l. service.

G. S. Douglass Dies

George S. Douglass, 57, director of the Bureau of Valuation of the Interstate Commerce Commission at Washington, D.C., died on January 5. Mr. Douglass was born at Beattle, Kan., on July 15, 1895, and attended Kansas State Agricultural College (B.S. in C.E., 1916). He began his career with the Bureau of Valuation of the I.C.C. on July 29, 1916. Except for an interval running from 1917 into 1920, when

George S. Douglass

he was in the armed services in World War I and then for a short while in outside employment, he was engaged until late in 1921 in assisting in inventorying the physical properties of railroads in the Western district, making his headquarters at Kansas City, Mo. Upon completion of the field work in this area, Mr. Douglass was transferred to the commission's office at Washington, D.C., to assist in the preparation of the engineering basic valuation reports and recapture reports and to defend them in hearings. Since 1933 he had been engaged in the general work of bringing forward the engineering inventories, and preparing special reports and exhibits for the commission's use in reorganization proceedings and rate cases. In 1942 he was appointed assistant head valuation engineer of the bureau and on July 1, 1945, he became director.

Jury Charges B&O Filed False Statements in 1943

A federal grand jury in Washington, D. C., has handed down an indictment charging the Baltimore & Ohio with filing false reports with two government agencies.

The Department of Justice issued a statement which said the 11-count indictment related to financial statements filed with the Interstate Commerce Commission and Reconstruction Finance Corporation. These statements were allegedly filed between March 20, 1943, and June 15, 1943.

"The indictment charged in all cases that the statements as to the financial condition of the railroad contained false statements as to either the cash balance, the balance of the sinking fund, or both," the Department of Justice said.

When return of the indictment was announced, B&O President R. B. White said "no statements were filed by the B&O with the I.C.C. or the R.F.C. which misled anyone." The B&O declined further comment pending a study of the charges.

Six of the counts in the indictment related to statements filed with the I.C.C. and the others to statements filed with the R.F.C. Each count charged that a discrepancy existed between statements filed with government agencies and with the road's true financial condition, as shown on the company's books.

ORGANIZATIONS

At a dinner meeting of the **New York Railroad Club,** to be held in the Hotel Commodore, New York, at 8:15 p.m. January 15, two representatives of the United States Steel Company will speak: F. R. Gammon, assistant vice-president, eastern area, on "Activities and Developments of the Fairless Works," and E. Grosvenor Plowman, vice-president — traffic, on "Railroad Transportation at Fairless Works." Before the meeting there will be a reception starting at 6 p.m..

SUPPLY TRADE

American Steel Foundries Sales Highest in History

Net income of American Steel Foundries in the fiscal year ended September 30, 1952, totaled $6,042,131, com-

The Electro-Motive Division of General Motors Corporation has announced the following engineering promotions: B. B. Brownell (top) as assistant chief engineer in charge of design and development; D. S. Smilanich (center) as facilities engineer; Bert Hefner (bottom) as electrical section engineer; and L. L. Johnson as project engineer.

The Caterpillar Tractor Company has appointed Norman E. Risk (left) and Richard S. Frank (right) assistant chief engineers, at Peoria, Ill.

pared with $6,676,191 in the preceding fiscal year, according to the recently released annual report. Sales were $139,556,821 (highest in the history of the company), compared with $116,755,916.

Railroad equipment parts furnished directly to railroads, or to builders of freight and passenger cars and locomotives, made up about 49 per cent of total sales in 1952, compared with 69 per cent in 1951, the report said.

Sam Hall Flint has been appointed general traffic manager of the **Quaker Oats Company.** Mr. Flint, for the past seven years director of the transportation division of the Georgia Public Service Commission, previously worked for the Southern and the Tallulah Falls.

Paul V. Galvin, president of **Motorola, Inc.,** has announced organization of a wholly owned subsidiary: **Motorola Communications & Electronics, Inc.** The new company will distribute products manufactured by the parent firm's Communications & Electronics division. No change is contemplated in field sales personnel.

R. B. Barnhill, formerly commercial sales manager of the Radio division of Bendix Aviation Corporation, has announced formation of his own sales organization: **R. B. Barnhill & Associates,** which will represent manufacturing concerns specializing in electronic components and assemblies and will cover the middle Atlantic coast area.

Guy J. Coffey, vice-president, has been elected president of the **Chicago Pneumatic Tool Company.** Mr. Coffey succeeds the late **W. L. Lewis,** who died last June 28. **H. A. Jackson,** chairman, who also has been acting president since Mr. Lewis's death, will continue as chairman and chief executive officer. In addition, **Thomas P. Harris** and **James F. Huvane** have been elected vice-presidents, and **Thomas F. Noonan** was elected assistant comptroller.

Daniel T. Warner, Jr., has been appointed Chicago traffic manager of the **Universal Atlas Cement Company** (a **U.S. Steel** subsidiary), to succeed **Eric R. Gustafson,** who retired December 31 after almost 44 years of service with the company. Mr. Warner, who had been assistant to Mr. Gustafson, will be succeeded by **George A. Smith,** who had been chief clerk in the cement company's New York traffic department.

Albert H. Lindsay has been appointed manager of the newly expanded service department of the **Nickel Cadmium Battery Corporation,** with offices at 100 Park avenue, New York. Mr. Lindsay joined the organization in January 1948, after 15 years as a service and sales engineer with the Edison Storage Battery Division of Thomas A. Edison, Inc. His duties as head of field service and test activities will include dissemination of technical information pertaining to battery applications, engineering, maintenance and service instruction and overseeing the service of installed equipment.

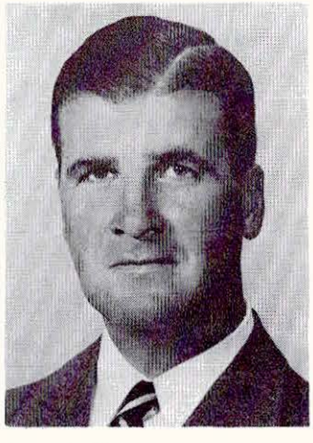
Albert H. Lindsay

John Cullen has been appointed superintendent of yards, roads and transportation at the **Kaiser Steel Company's** Fontana, Cal., works.

James D. Perley has been appointed director of employee relations for the **Westinghouse Air Brake Company** and its subsidiaries. For the past six years Mr. Perley has been director of employee relations for the Borg-Warner Corporation's Ingersoll products division.

Lawrence L. Weber has been appointed assistant to general traffic manager of the **Pittsburgh Steel Company.**

Alfred E. Pratt, since 1933 Philadelphia regional transportation sales



Joseph V. Smith (left) and James H. Knowles (right), have been elected chairman of the board and president, respectively, of Hubbard & Co. Mr. Smith, with Hubbard since 1915, also has been elected chairman of the executive commitee. Mr. Knowles has been with Hubbard since 1947.

manager of the Finishes division of **E. I. du Pont de Nemours & Co.,** has retired after more than 26 years with the company. Mr. Pratt was in charge of sales of paints and other finishes to the railroad, aviation, marine, petroleum and steel industries in the area. Sales in those fields are now handled by **Robert M. Dean, Jr.,** regional industrial sales manager since 1947, assisted by **John D. Stokes,** who has been appointed district industrial sales manager.

The **Philip Carey Manufacturing Company** has appointed **Dan Call** as railway sales manager. Mr. Call entered the railroad field with the Richmond, Fredericksburg & Potomac in 1929. He was employed as draftsman,

Dan Call

air conditioning supervisor, mechanical inspector and general foreman of the locomotive department. He is an alumnus of the University of Virginia and the Virginia Mechanics Institute.

KSM Products, Inc., has opened a new district engineering office in Milwaukee. **Jack Harris,** formerly associated with Gregory Industries, has been appointed district engineer in the new office.

Frank G. Moore has been appointed general traffic manager of the **Columbia-Southern Chemical Corporation,** with headquarters in the firm's general offices at Pittsburgh.

Wentworth Smith has been elected vice-president in charge of sales, and a member of the board of directors, of the **Neptune Meter Company.** Mr. Smith, general sales manager since 1951, fills the vacancy left by the recent retirement of **Rex J. Gorder.**

OBITUARY

Robert J. Weber, 58, assistant district manager of the Westinghouse Electric Corporation's Central sales district, died on December 28.

EQUIPMENT AND SUPPLIES

B&M to Spend $5,800,000 On Diesels and Sleepers

One of the largest modernization programs in the history of the Boston & Maine will be carried out during 1953 and 1954 with purchase of 44 new diesel locomotives costing $5,000,000 and four stainless steel sleeping cars for the "State of Maine" and the "Gull" at a cost of $200,000 per car. The new locomotives will, when delivered, bring the fleet of B&M diesels to 277 and will permit retirement of 83 steam locomotives. This will eliminate all steam locomotives on the system except those left in service on suburban Boston passenger trains.

The new motive power, as planned, will consist of 14 800-hp., 14 660-hp., five 1,200-hp. and 11 1,500-hp. units, and will be distributed over different parts of the system.

The new sleeping cars will have six roomettes, six sections and four double bedrooms. On the "State of Maine," the cars will operate between New York City and Portland, Me., and between New York City and Nashua, N.H., Manchester and Concord.

GN Budget for '53 Nearly $29 Million

Expenditures authorized by Great Northern directors for 1953 cover more than $13½ million to be spent on additional diesel locomotives and other equipment. Included in the authorization are expenditures for 37 more diesel units, 500 box cars, 300 hopper ballast cars, 100 covered hopper cars, and 200 flat cars. In addition, the program for the subsidiary Western Fruit Express Company calls for construction of 350 heavily insulated refrigerator cars.

Track improvements authorized include installation of 185 miles of new 115-lb. rail and reballasting of 496 miles of roadbed. This phase of the program will cost approximately $15½ million.

COMMUNICATIONS

The **Northern Pacific** will extend its dispatcher-to-train radio system to cover an additional 200 miles of main line between Mandan, N.D., and Glendive, Mont., during 1953. Another project scheduled for 1953 is installation of dual-frequency radios on locomotives used in iron ore switching service in Minnesota's Cuyuna range. These engines will be placed in contact with the trainmaster at Ironton, Minn.

The Mandan-Glendive installation will involve 10 wayside stations arranged so they can be connected to the dispatchers' telephone circuit. This will enable the dispatcher at Glendive to talk directly with the crew of any through freight train in the 200-mile territory east of that point.

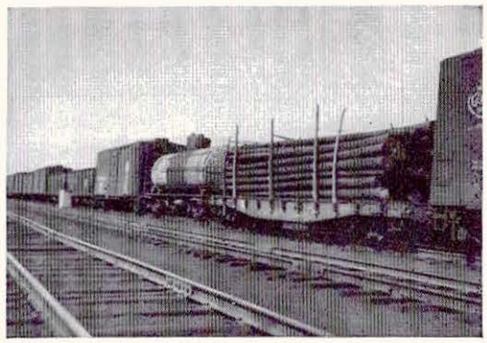
SIGNALING

The **Chicago & North Western** has ordered equipment from the General Railway Signal Company for installation of 15 sets of intermittent inductive train control on switching diesels.

The **Chicago, Rock Island & Pacific** has ordered from the Union Switch & Signal Division of the Westinghouse Air Brake Company coded carrier control units and associated apparatus required to move the control machine for the 231-mile Herington, Kan.-El Reno, Okla., C.T.C. territory, from Caldwell, Kan., to El Reno, which is division headquarters. Field work will be handled by railroad forces.

The **Louisville & Nashville** has ordered equipment from the General Railway Signal Company for installa-

ONE SEQUENCE in the Southern's new color movie of freight claim prevention, "The High Cost of Carelessness," is a carefully staged sideswipe, complete with sound. The sequence is designed to illustrate the fact that it is dangerous to leave a car "almost in the clear."



more facts about

CAR PERFORMANCE

with

LOW-COST SOLID BEARINGS

Analysis of performance data for new, on-line, and interchange equipment points the way to low-cost solution of hot box problems

Here are three more indisputable facts about car performance with low-cost solid-type bearings. These facts are only highlights from the solid bearing record — emphasized here to point the way to even better performance through improved maintenance and intensified development.

fact 1. On railroad after railroad, new solid bearing freight cars are performing equally as well as those equipped with far more costly alternate type bearings. These expensive bearings have been in use on freight cars an average of less than 3 years, and have not established any real advantage in reducing hot boxes when compared with solid bearing cars of equivalent age and service.

fact 2. Solid bearing performance in on-line service, passenger and freight, is unsurpassed. Alternate high-cost bearings, where used, have *not* improved car performance in this service as measured by road failures per number of units installed.

fact 3. The daily operating efficiency of all solid bearing interchange cars is better than 99.97% — even though these cars average over 20 years old. But the efficiency of on-line solid bearing equipment is even greater. Thus, the difference in performance reflects the difference in maintenance standards far more than it does the age of the car.

HOW TO LICK HOT BOXES

If you really want to lick hot boxes, at a cost consistent with economic realities, you can do it best with low-cost solid bearing designs. Heat-resistant lining metals and low-cost alarms are already available. Improved lubricating methods are being developed. Combine these improvements with an intensified program to upgrade maintenance standards, and hot boxes will virtually disappear.

Then, too, you still have all the other advantages which solid journal bearings bring to railroad rolling stock. You can take the maximum load, make the fastest schedule. You save 1,000 pounds per car and get the smoothest ride on any standard truck. You maintain the lowest per diem interchange rates for car rental. But most important of all, you get the best possible bearing performance at the lowest possible cost.

Write for your copy of "The Facts About AAR Solid Journal Bearings."

Magnus Metal Corporation, 111 Broadway, N.Y. 6; or 80 E. Jackson Blvd., Chicago 4.

MAGNUS

Solid Bearings

Right for Railroads

...in performance...in cost

MAGNUS METAL CORPORATION *Subsidiary of* **NATIONAL LEAD COMPANY**

tion of a traffic control system between Vine Hill, Tenn., and Brentwood.

The **Ontario Northland** has ordered equipment from the General Railway Signal Company for installation of absolute-permissive block signaling on 13 miles between Haileybury, Ont., and Latchford.

The **Union Pacific** has ordered 33 sets of type E, three-indication coded continuous cab signal equipment from the Union Switch & Signal Division of the Westinghouse Air Brake Company.

FINANCIAL

Alleghany Corporation. — *Exchange of Series A Preferred*—Alleghany Corporation has announced that 100,000 shares of its outstanding series A preferred stock were tendered and accepted pursuant to the exchange offer first made to series A preferred stockholders on October 24, 1952, and that the corporation had issued (or is about to issue), $10,000,000 of its five per cent 10-year sinking fund debentures and warrants to buy 2,000,000 shares of its common stock in exchange for the series A preferred so tendered.

Under provision of the exchange offer, 100,000 shares of series A preferred was the maximum amount the corporation would accept. Of the total number of shares deposited Robert R. Young, chairman of Alleghany, and Mrs. Young, deposited 28,063 shares, and Allan P. Kirby, Alleghany president, deposited 11,317 shares.

The new debentures are listed on the New York Stock Exchange and the warrants on the American Stock Exchange (formerly the New York Curb Exchange).

Bangor & Aroostook. — *Sinking Fund Requirements Anticipated.* — This road has purchased at par and retired an additional $300,000 principal amount of its collateral trust bonds. These senior securities of the road carry 4 per cent interest and mature in 1961; $2,100,000 principal amount remains.

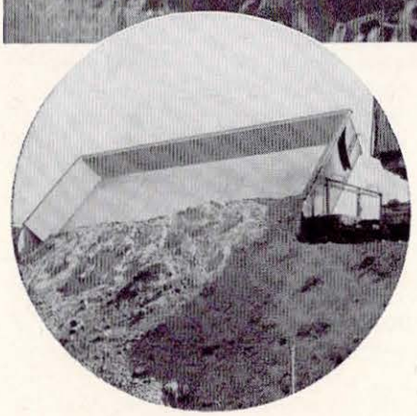
As a result of this purchase, the road has anticipated sinking fund requirements of $300,000 a year through May 1, 1954, and faces no further requirement until May 1, 1955. The entire bonded debt of the B&A now stands at $10,728,000.

Carolina, Clinchfield & Ohio of South Carolina.—*Bonds Extended.*— Division 4 of the I.C.C. has authorized this road to extend, from December 15, 1952, until September 1, 1965, the maturity date on its first mortgage bonds. The bonds, with interest at 5 per cent, are outstanding in the amount of $3,000,000.

Meridian & Bigbee (Meridian & Bigbee River). — *Reorganization.* — The I.C.C. has approved payment of $14,000 to J. C. Floyd, trustee, for "extraordinary services" rendered since July 23, 1950, in connection with this reorganization proceeding.

Missouri-Kansas-Texas. — *Modification of Capital Structure.* — This road has applied to the I.C.C. for approval of a Mahaffie Act modification of its capital stock. The plan, with a proposed effective date of January 1, 1953, contemplates the exchange of new stock for old stock, as follows: For each share of old preferred stock shareholders would receive one share of new 5 per cent preferred, one share of new participating non-cumulative preferred, four shares of new common and a warrant to purchase one new common share; for each share of old common stock shareholders would receive one-third of a share of new common and a warrant to purchase one new common share (*Railway Age*, October 27, 1952, page 63).

This modification plan is designed to wipe out arrearages on the road's present cumulative preferred stock. The backlog of unpaid dividends on this stock amounts to $147 a share. (*Continued on page* 248)



Over a quarter century ago the first (and original) double-trunnion dump car was placed in service by Differential on the L & N. Sound engineering and careful workmanship were such that this car is still in service — still earning money for its owners.

Such details as hardened, self-lubricating pins in door mechanisms, rolled steel weldments instead of castings (making repairs easier when repairs are necessary)—these are examples of details that put Differential in the lead more than 25 years ago — and keep it there!

Send for Bulletin 56 and get more information on this pioneering air dump car.

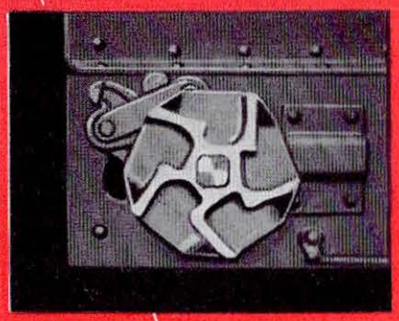
DIFFERENTIAL PRODUCTS INCLUDE:

Locomotives, mine cars, mine supply cars, rock larries, mantrip cars, air dump cars, dumping devices and complete haulage systems.

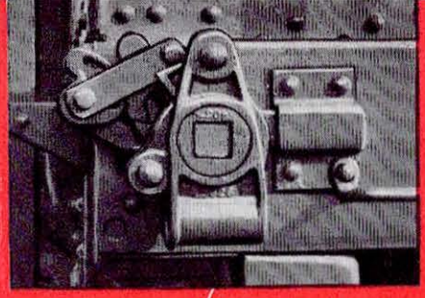
DIFFERENTIAL STEEL CAR COMPANY

FINDLAY, OHIO

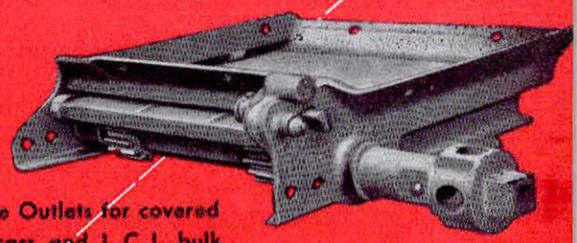
SINCE 1915 — PIONEERS IN HAULAGE EQUIPMENT



Enterprise Chain Device for general service gondola cars.

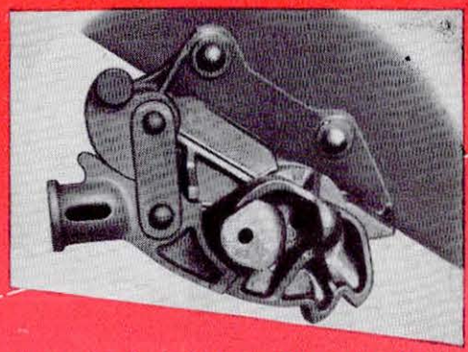


Enterprise Link Device for general service gondola cars.



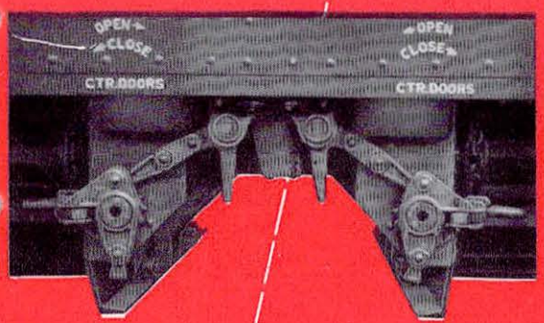
Enterprise Outlets for covered hopper cars and L. C. L. bulk containers.

Over 250,000 FREIGHT CARS equipped with ENTERPRISE DOOR OPERATING DEVICES



Enterprise Type D Door Operating Mechanism for controlled discharge of hopper cars, doors operate in pairs.

Enterprise Unit Door Latch for hopper cars.



Enterprise Multi-Service Ballast Car for ballasting or commercial service.

Enterprise Center Discharge Ore Car doors operative from either side.

Door Operating Devices Exclusively Since 1903

ENTERPRISE RAILWAY EQUIPMENT COMPANY

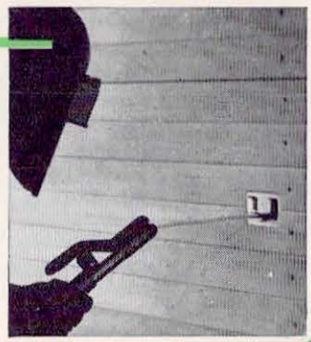
59 East Van Buren Street · Chicago 5, Illinois

So easy

to apply to existing cars. *Fast* routing with template locates position.

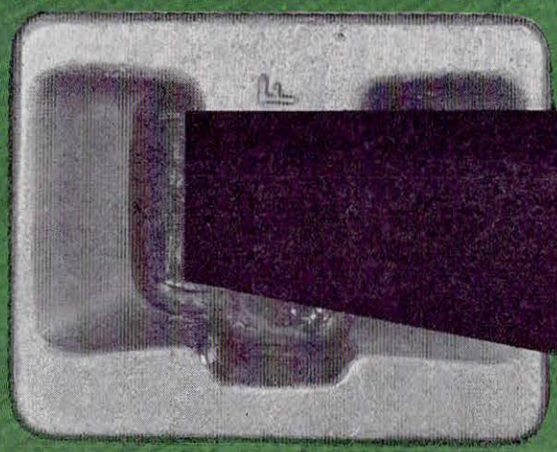
So easy

to apply to Z-bar side posts of new or existing cars. Weld or blind fastener types available.



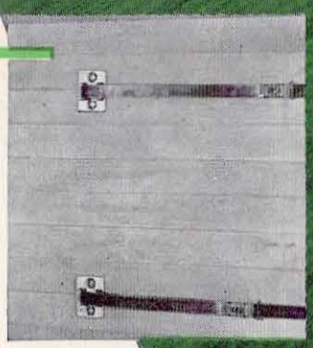
So easy

to use. Shipper merely makes loop and hooks under tongue. Locking tongue is self-cleaning.



So easy

to load. Staple strapping to siding as shown when loading or unloading. Out of the way, safe, *on hand!*

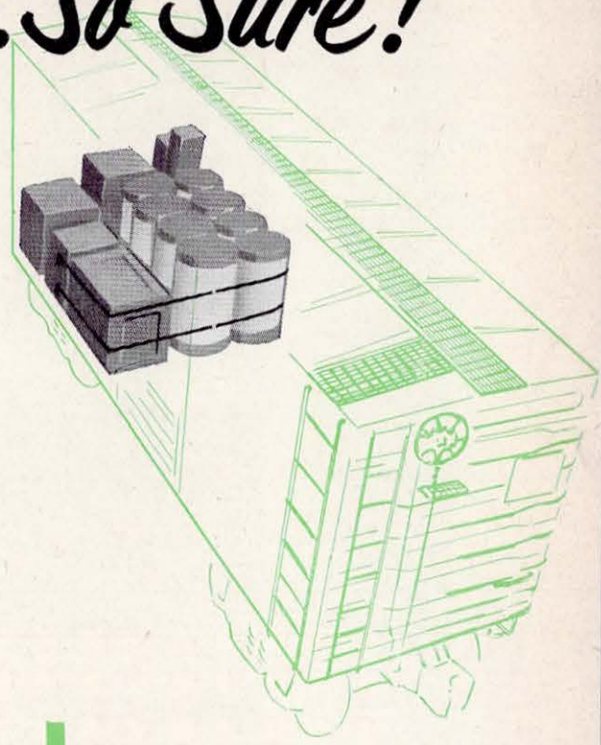


So easy

to avoid lading losses! When claims come in, remember it's *so easy* to apply and use MF-anchors, that this type of picture should—*and could*–be eliminated!

and So Safe... So Sure!

Stronger than the strongest steel strapping—fits ¾″ to 1¼″ sizes—and it *will not slip out!* The tongue *locks* the load if lading pressure slackens in transit!



M-F

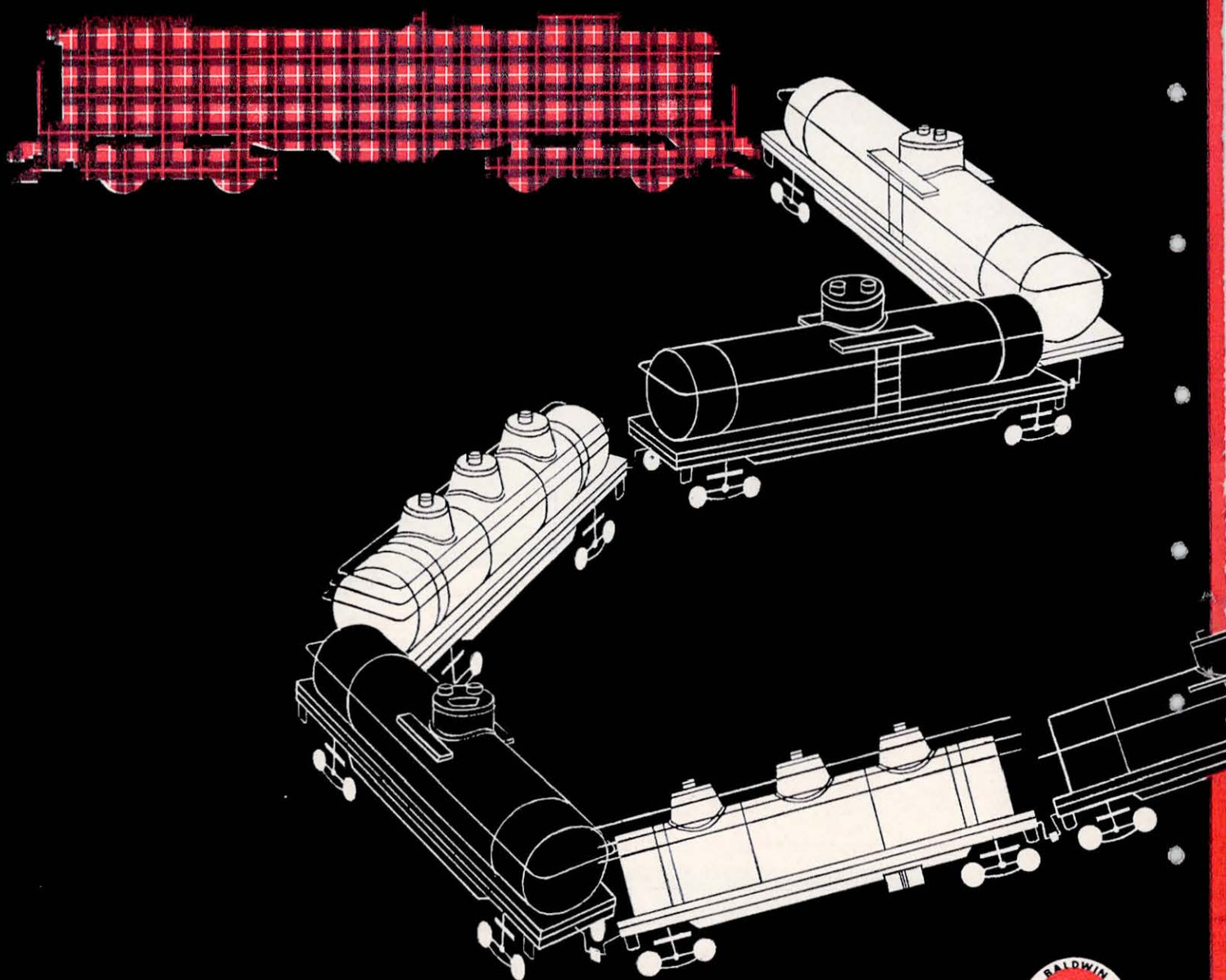
Foolproof . . . easy to apply, easy to disengage. The *safe*, sure way to protect lading, cars *and* employes.

lading strap anchor

an **M-F** car is a
Maintenance-**F**ree car

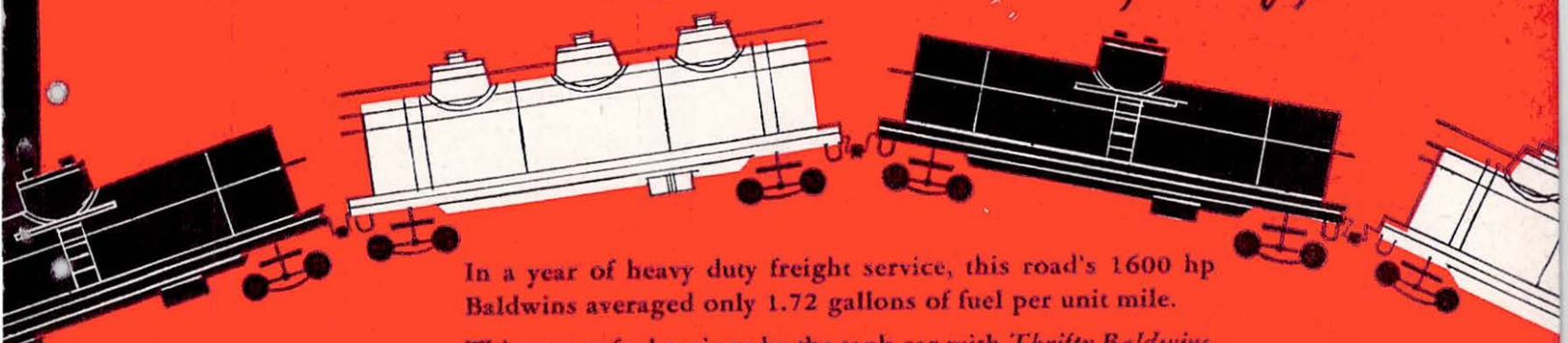
MAC LEAN-FOGG LOCK NUT COMPANY

5535 North Wolcott Avenue, Chicago 40, Illinois • ***In Canada: The Holden Co., Ltd., Montreal***



A Leading Southern Railroad's* Experience Proves Baldwins Are Thrifty

...they're thrifty!



In a year of heavy duty freight service, this road's 1600 hp Baldwins averaged only 1.72 gallons of fuel per unit mile.

This means fuel savings by the tank car with *Thrifty Baldwins.*

* The facts in this advertisement have been verified by this railroad . . . we'll gladly supply the name of the road if you write us on your company letterhead.

BALDWIN-LIMA-HAMILTON CORPORATION

Philadelphia 42, Pa. • Offices in Principal Cities

BALDWIN-Westinghouse

DIESEL-ELECTRIC LOCOMOTIVES

...time does not affect Streamlite HAIRINSUL

The installation of Streamlite HAIRINSUL into new refrigerator cars is a one time investment. *Streamlite HAIRINSUL actually outlasts the life of the car!*

It can be re-used without need for further processing. Records show where all-hair insulation, removed from refrigerator cars after 20 years or more of service, is in "like-new" condition. Its high insulating efficiency remains the same year in and year out.

In addition, Streamlite HAIRINSUL assures you all the advantages at the right—and more, too. Write for complete data.

LOW CONDUCTIVITY. Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity — .25 btu per square foot, per hour, per degree F., per inch thick.

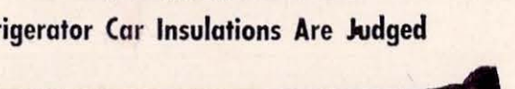
LIGHT WEIGHT. Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT. Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL. Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE. STREAMLITE HAIRINSUL is available ½" to 4" thick; up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

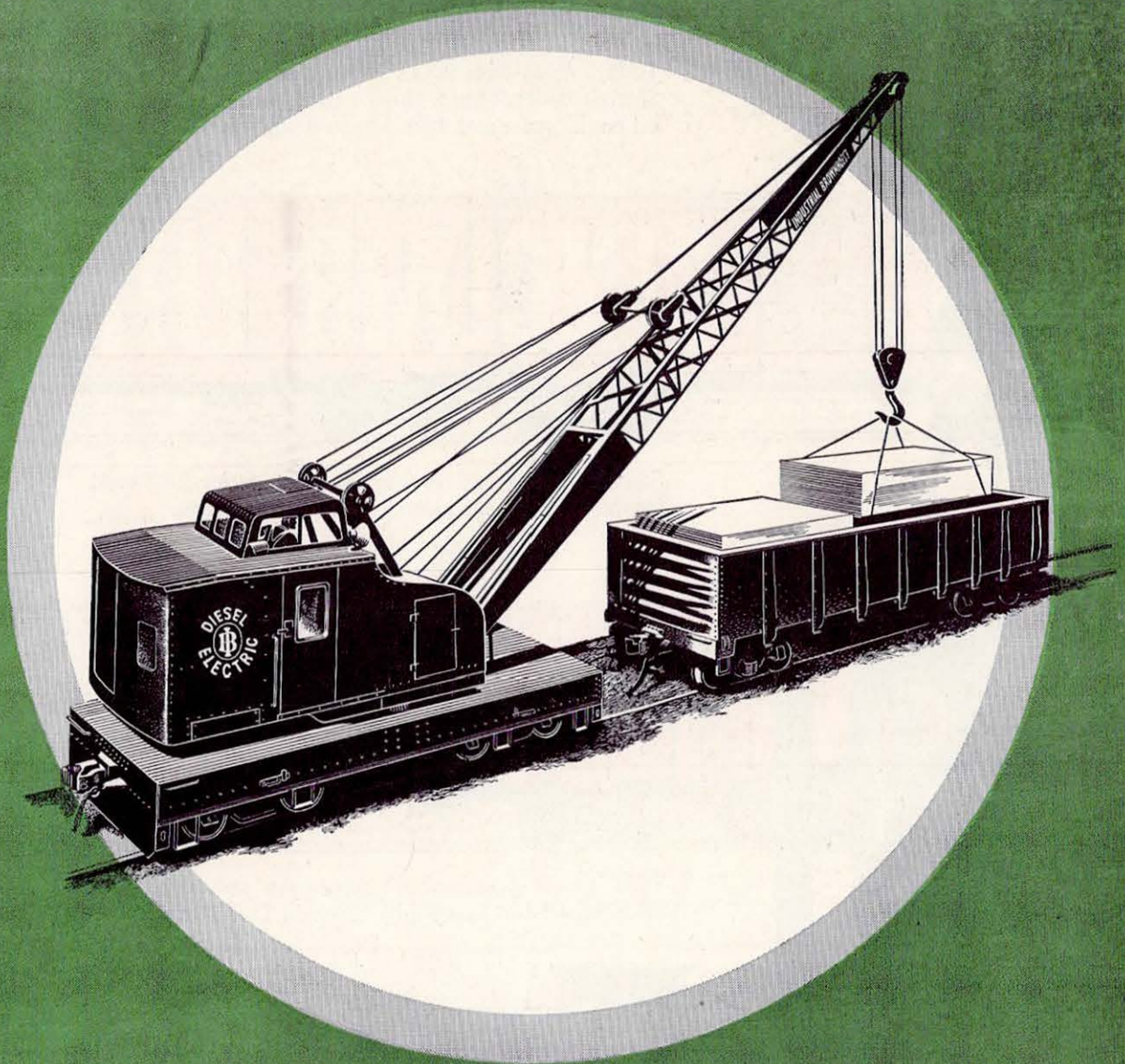
HIGH SALVAGE VALUE. The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.



Sets The Standard By Which All Other Refrigerator Car Insulations Are Judged

Dept. H-31, Merchandise Mart, Chicago 54, Ill.

BROWNHOIST Diesel Electric Cranes save time, save labor, save money

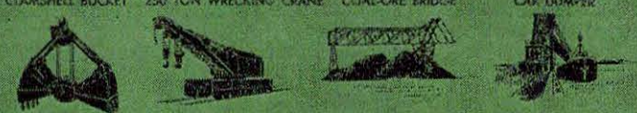


Men who know cranes are quick to recognize the fact that Industrial Brownhoist Diesel Electric Locomotive-Cranes provide savings in man-hours, production time and money. Brownhoist Cranes, powerful, efficient units with high tractive power and rapid acceleration, give top performance as a switch engine or as a crane operating magnet, hook or bucket. The patented Monitor-Type Cab and Clear-Vision Boom permit unlimited 360° visibility that helps the operator safely turn out a greater volume of work. The simplified design and accessibility of the moving parts make Brownhoist Cranes easy to maintain and repair. Brownhoist builds Locomotive-Cranes in capacities from 25 to 80 tons.

Write today for complete information.

155

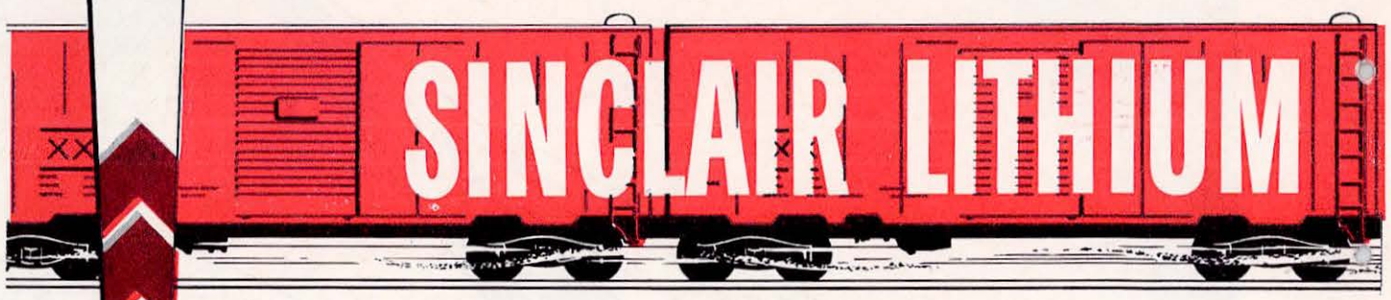
CLAMSHELL BUCKET 250 TON WRECKING CRANE COAL-ORE BRIDGE CAR DUMPER



BROWNHOIST
builds better cranes

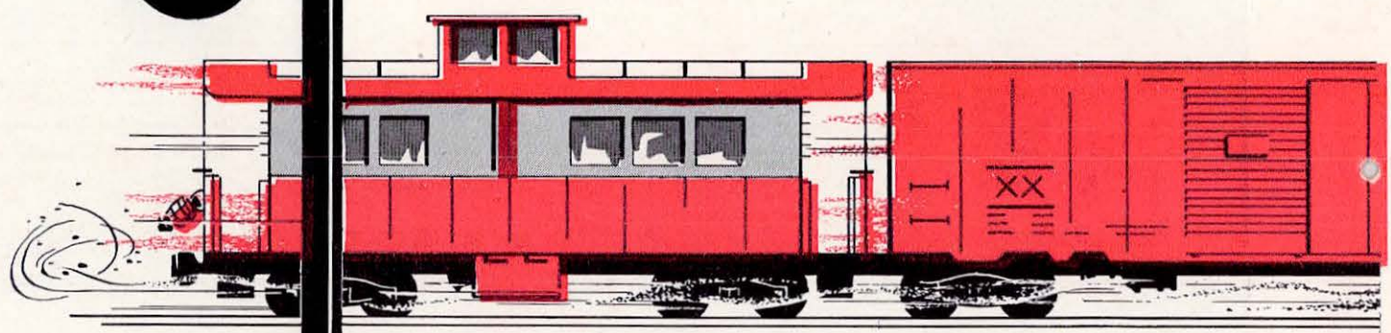
INDUSTRIAL BROWNHOIST CORPORATION, BAY CITY, MICHIGAN • DISTRICT OFFICES: New York, Philadelphia, Cleveland, San Francisco, Chicago, Canadian Brownhoist, Ltd., Montreal, Quebec • AGENCIES: Detroit, Birmingham, Houston, Los Angeles

Today, more than 90 U. S. railroads prefer Sinclair GASCON®OILS. Only a tried, tested and outstanding oil could make and *keep* a record such as this.

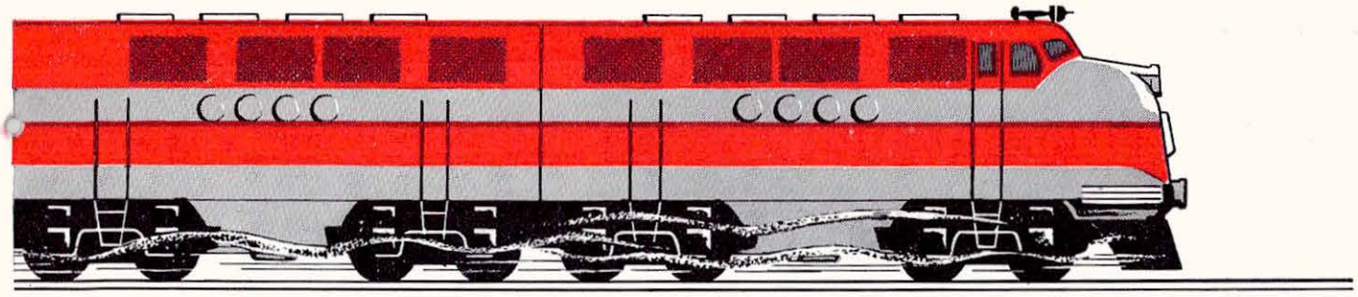


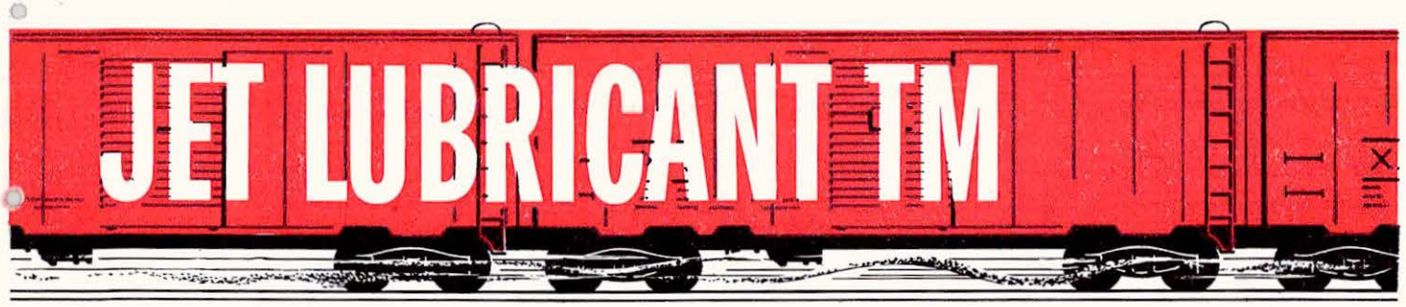
Something new and already proved superior for Diesel locomotive and car journal bearing lubrication.

Three years of extensive testing have proved JET to be unsurpassed for heavy-duty work in Diesel traction motor gears.



Only Sinclair Diesel Fuel contains the amazing rust inhibitor RD-119®. Used regularly, it effectively *stops* damaging rust and corrosion in fuel systems.





SINCLAIR RAILROAD LUBRICANTS
...for Superior Diesel Performance

SINCLAIR REFINING COMPANY • RAILWAY SALES • NEW YORK • CHICAGO • ST. LOUIS • HOUSTON

sure-acting
BUILT-IN AND PORTABLE FIRE PROTECTION for diesel locomotives

Because of the increased fire hazard and high replacement cost with diesel locomotives, more and more railroads are specifying C-O-TWO Railroad Fire Protection Equipment. You too, can protect your diesel locomotives . . . inside . . . outside . . . underneath . . . from that inevitable stray spark or short circuit by installing complete, fast-acting C-O-TWO fire protection . . . the first trace of fire is instantly detected and then extinguished in seconds with little if any interruption to operations.

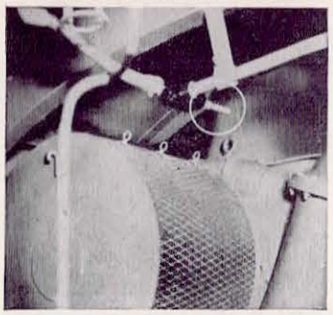
The following equipment, all complying with current railroad requirements, can be easily installed aboard your diesel locomotives . . . whether under construction or already on the line:

- **Thermostat Fire Alarm System** for detecting fire in the engine compartments.
- **Built-In Total Flooding Carbon Dioxide Type Fire Extinguishing System** for extinguishing fire inside the locomotive.
- **Two or More Built-In Carbon Dioxide Type Hose Rack or Hose Reel Fire Extinguishing Units** for extinguishing fire inside or outside the locomotive.
- **Two or More Special Stationary or Portable Carbon Dioxide Type Hose Rack Fire Extinguishing Units** for extinguishing fire inside or outside the locomotive, as well as along the right-of-way.
- **Three or More Squeez-Grip Carbon Dioxide Type or Dry Chemical Type Hand Portable Fire Extinguishers** for extinguishing fire during the incipient stage.

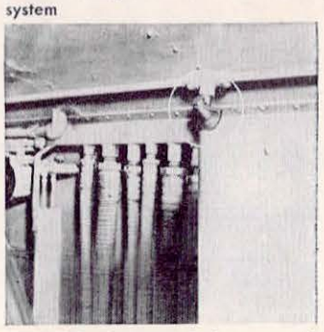
C-O-TWO Railroad Fire Protection Equipment is quality built to render a lifetime of satisfactory service. Simplicity, practicability, longevity and minimum maintenance are built-in features that guarantee quick, positive action the instant fire strikes.

Remember fire doesn't wait . . . so, why not let an expert C-O-TWO Railroad Fire Protection Engineer help you now in planning complete and up-to-date fire detecting and extinguishing facilities for your diesel locomotives. Write today for a free copy of the instructive brochure entitled, "C-O-TWO Diesel Locomotive Fire Protection Equipment".

TYPICAL INSTALLATIONS

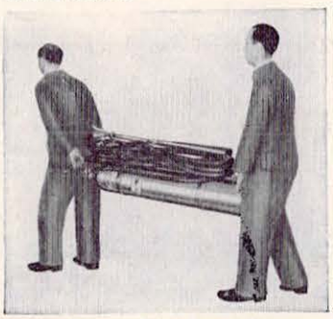


one of heat detectors in engine space for actuating thermostat fire alarm system



one of baffle type discharge nozzles in engine space for total flooding with carbon dioxide

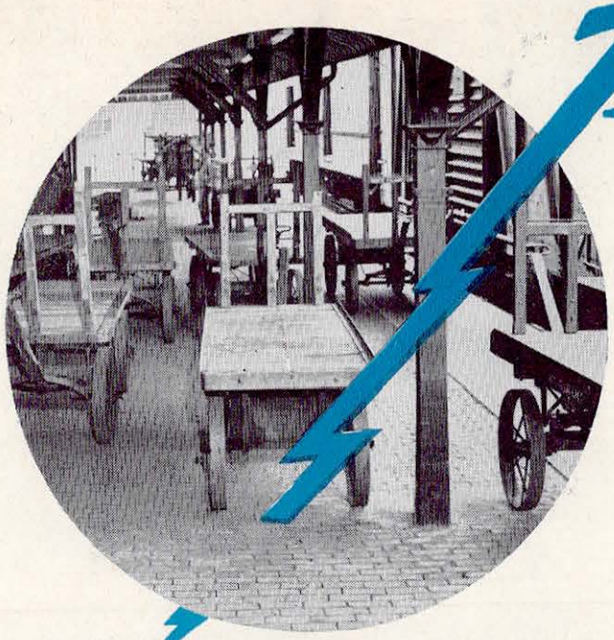
built-in hose rack with special discharge horn for local application of carbon dioxide



special hose rack can be used in stored position or easily carried by two men to fire area

TRADE MARK C-O-TWO REG. U.S. PAT. OFF.

C-O-TWO FIRE EQUIPMENT COMPANY
NEWARK 1 • NEW JERSEY
Sales and Service in the Principal Cities of United States and Canada
Affiliated with Pyrene Manufacturing Company
MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT
Squeez-Grip Carbon Dioxide Type Fire Extinguishers • Dry Chemical Type Fire Extinguishers • Built-In Smoke and Heat Fire Detecting Systems
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems

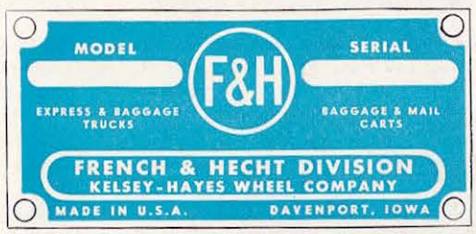


Progress has hit the platforms, too

The noisy, steel shod veterans of the station platform are obsolete. Hard to pull and to steer — load jolting and floor scarring — with grease exposed hubs and constant maintenance — they are rapidly being replaced, on locations from coast to coast, by the refinements and low maintenance costs of

F&H STANDARD
EXPRESS • BAGGAGE • MAIL TRUCKS

bearing this name plate:



F&H STANDARD TRUCKS are--

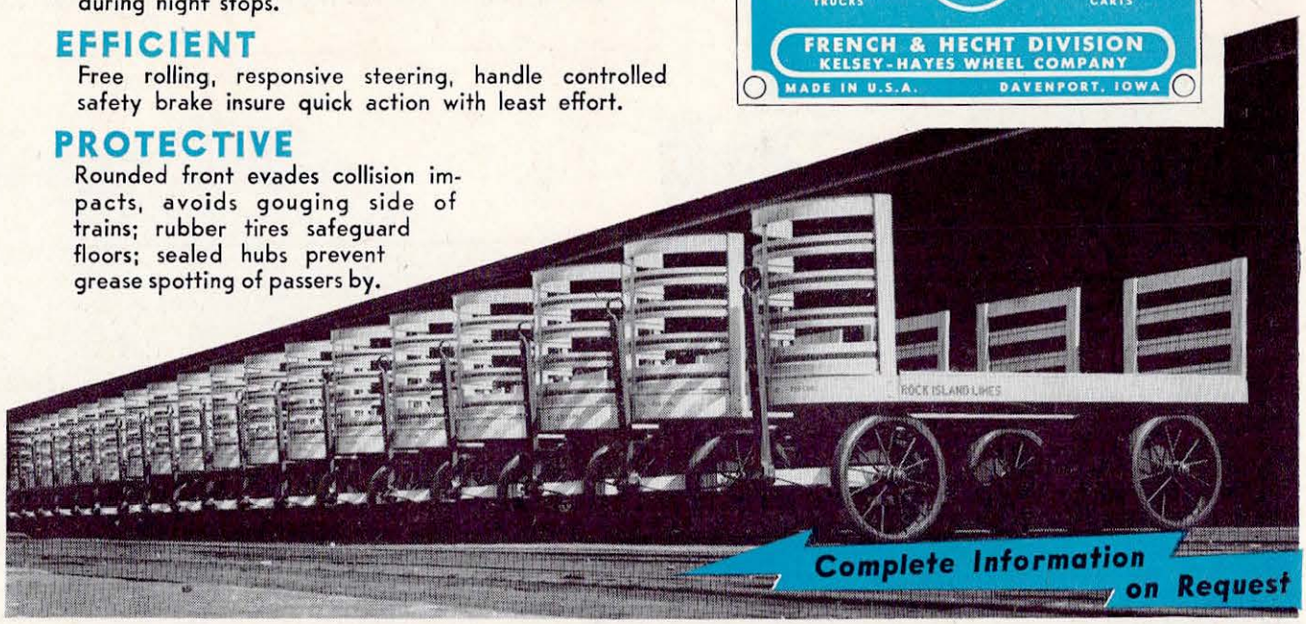
EYE PLEASING
— in keeping with modern terminal design, sleek trains and sound public relations.

DURABLE
Every detail field tested under exacting traffic conditions to withstand rugged and constant usage.

QUIET
Whisper quiet — a boon to the sleeping passenger during night stops.

EFFICIENT
Free rolling, responsive steering, handle controlled safety brake insure quick action with least effort.

PROTECTIVE
Rounded front evades collision impacts, avoids gouging side of trains; rubber tires safeguard floors; sealed hubs prevent grease spotting of passers by.

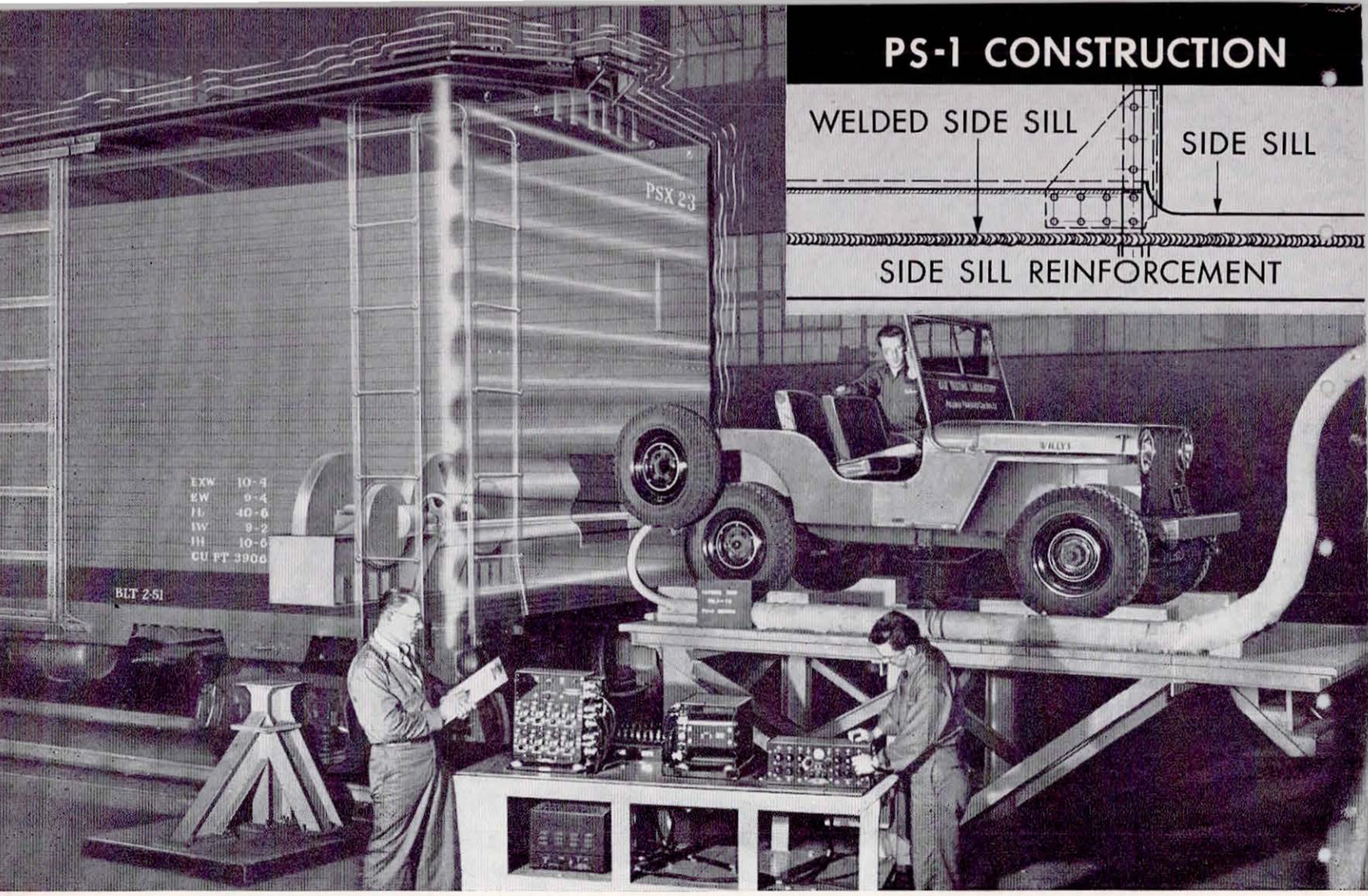


Complete Information on Request

Know How

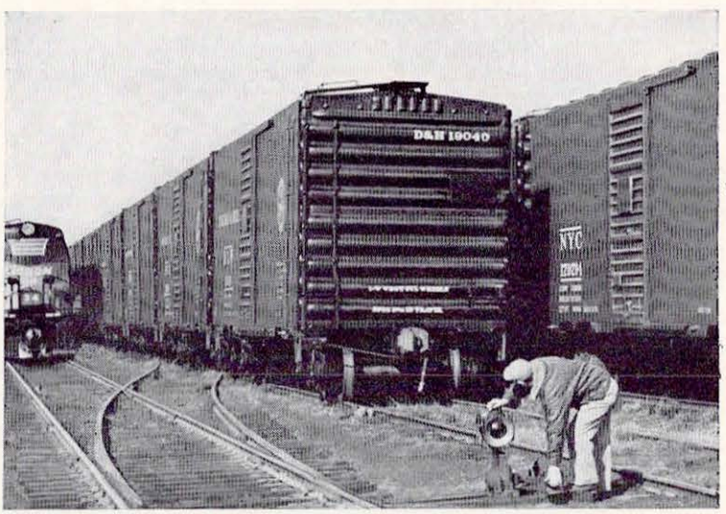
FRENCH & HECHT DIVISION
KELSEY-HAYES WHEEL COMPANY
DAVENPORT, IOWA

SINCE 1888



Pullman-Standard Research & Development engineers try to anticipate trouble by subjecting the PS-1 to tests such as the one shown above. In this grueling fatigue test, simulating speeds of 50 mph., the jeep drives an oscillating device (shown in the phantom view), mounted over the center sill at the bolster. Two eccentric flywheels build up a vibration so severe that the lading actually leaves the floor. The inset drawing shows one of the many construction features that enables the PS-1 to give more service miles with less maintenance.

More service miles with less maintenance is the goal of PS-1 engineers. Exhaustive tests indicate that the PS-1 construction of side sill and reinforcement at the doorway has overcome the costly maintenance experienced at this location in many other current designs of cars. Field research of "on-line" conditions led to improved construction and design of the PS-1, to make it a better box car.



50,000 PS-1s have proved their dependability for 56 railroads. Each PS-1 is completely standardized and each is built to the strict specification of the Pullman-Standard. Orders can be placed for one or as many PS-1s as required. Many railroads have reordered this outstanding box car as many as four or five times, in quantities ranging from one to 3,000 . . . facts that prove railroad acceptance.

SUBSIDIARY OF

CAR BUILDING DIVISION **PULLMAN**

79 EAST ADAMS STREET, CHICAGO 3, ILL. • BIRMINGHAM

Research and development

Freight cars must be built for tough service . . . for operating conditions that are constantly changing. By duplicating "on-line" conditions in the laboratory, Pullman-Standard Research and Development actually anticipates problems that might arise. This, plus field research and engineering, keeps the PS-1 in a state of continual development, making it a better and better buy.

keep the PS-1

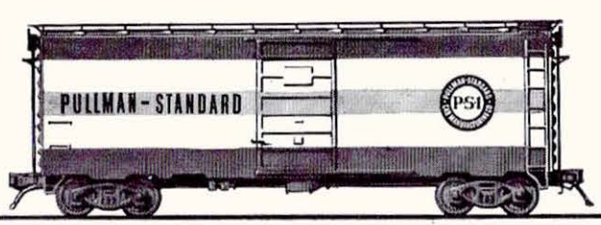
One reason why the PS-1 is a better box car is that Pullman-Standard engineers look for trouble, so that the PS-1 can be improved. For example, they found that a stronger side sill arrangement was required at the doorway to overcome the costly maintenance experienced at this location in many other current designs of box cars. The results of tests, such as the one shown at the left, were embodied in the design and construction of the PS-1 to make it a superior box car.

up to the "Pullman" standard

The PS-1 is being bought and reordered by a majority of the country's leading railroads. Quantities run from one to 3,000. Any railroad can order as many PS-1s, or as few, as needed. If you require fast delivery on an outstanding box car—at lower costs—get the facts on the PS-1.

When you come to Chicago, you are cordially invited to visit our Michigan Avenue Industrial Showroom.

The RECORD BREAKING **PS-1**



PULLMAN INCORPORATED

PULLMAN-STANDARD CAR MANUFACTURING COMPANY

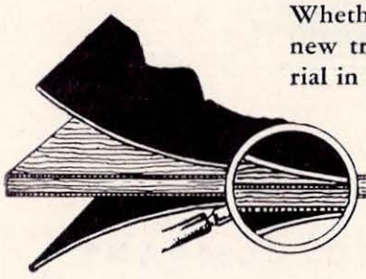
PITTSBURGH • NEW YORK • SAN FRANCISCO • WASHINGTON

THE *Beauty* OF MET-L-WOOD (METAL BONDED TO PLYWOOD) IS ALL *Practical*

Consider these practical advantages behind the smooth, mar-resistant surfaces of Met-L-Wood doors, panels and partitions in your rolling stock:

- **STRENGTH . . . 3/8" Met-L-Wood panel as stiff as 1/4" steel plate!**
- **LIGHT . . . as much as 73% less weight than standard steel construction**
- **SOUND-DEADENING**
- **INSULATING**
- **VIBRATION-DAMPING**
- **FIRE-RESISTING**

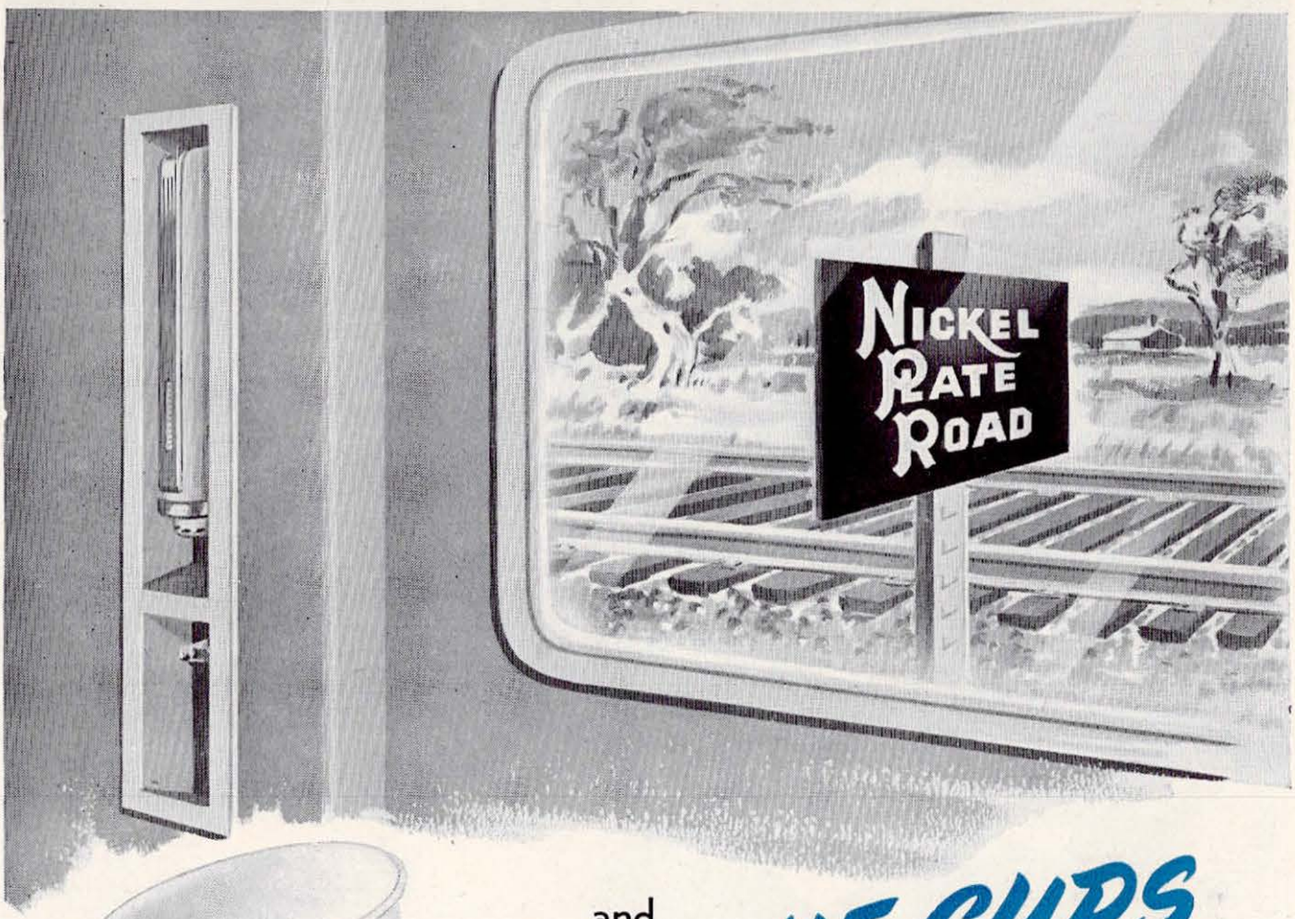
Whether your plans are for reconditioning old cars or building complete new trains, investigate the full possibilities of this versatile structural material in terms of design, efficiency, economy and beauty.



MET-L-WOOD CORPORATION

6755 West 65th Street, Chicago 38, Illinois

TWO FAMOUS SIGNS IN RAILROADING . . .



. . . and

DIXIE CUPS

Think of fast service and you naturally think of the Nickel Plate Road. Freight shippers know it's tops for delivering the goods on time—passengers know it's unsurpassed for streamlined, dependable, courteous, rail service. Yes, all across the vast expanse extending from the States of Illinois and Missouri to New York, the emblem of the Nickel Plate Road is synonymous with railroading at its finest.

Dixie Cups too, are a famous sign of railroading at its best. That's why you'll find Dixie Cups used on the Nickel Plate Road, as on most other great American railroads. The popularity of the world-famous Dixie name, combined with "highest quality" manufacturing standards and smart appearance provide the first-rate paper cup service so essential to customer good-will, and so much a part of all fine railroads.

Remember too, you pay no more for Dixie Cups, the best known, most popular of *all* paper cups! For full information

Write Railroad Department

DIXIE CUP COMPANY

Easton, Pa.

RECESSED DISPENSER

Gleaming satin-chrome finish. Fits flush with bulkhead. Exclusive Dixie adaptors permit use of Dixie flat-bottom cups or Vortex cone-shaped cups, either large or small.

STREAMLINER

Trim, smart, easy to mount. Clear plastic window signals need for refill. Holds Dixie flat-bottom cups or Vortex cone-shaped cups, either large or small.

Specially imprinted cups with your own insignia, slogan or message are available.

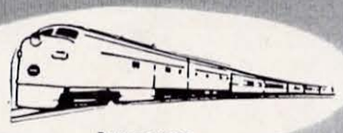
"Dixie" is a registered trade mark of the Dixie Cup Co.

STANDARD IN RAILROAD SERVICE FOR OVER 30 YEARS!

AEROQUIP SELF-SEALING COUPLINGS

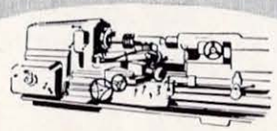
AND FLEXIBLE HOSE LINES

BUSES AND TRUCKS



RAILROADS

OIL FIELD DRILLING RIGS

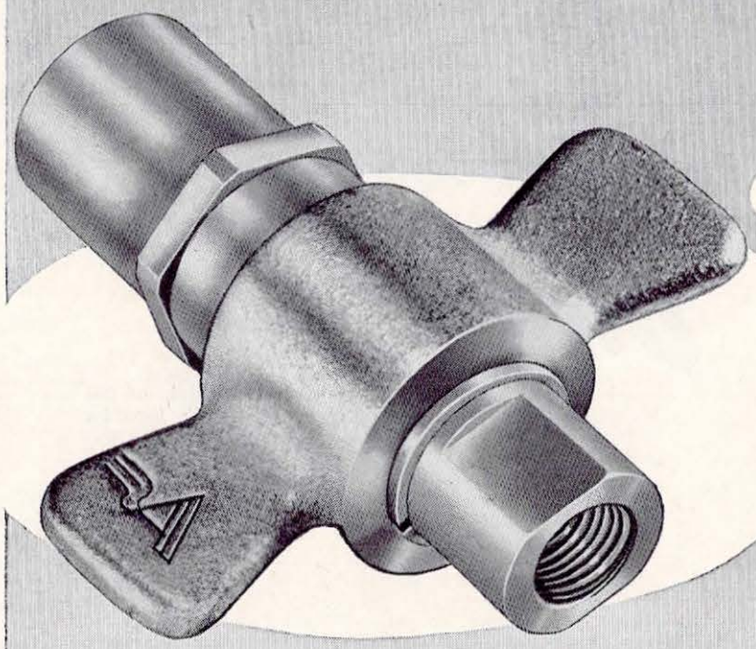


MACHINE TOOLS

MATERIALS HANDLING TRUCKS

Speed Maintenance

WHEREVER FLUID-CARRYING LINES MUST BE DISCONNECTED AND RECONNECTED



Speed **maintenance,** ***speed*** **repair operations and** ***speed*** **interchanging of accessories joined by fluid-carrying lines with Aeroquip Self-Sealing Couplings. Lines may be separated in a few seconds without loss of fluid. No air enters the system upon reconnection. There is no need to drain or prime the fluid system. One Self-Sealing Coupling takes the place of two shut-off valves.**

Aeroquip

REG. TRADE MARK

AEROQUIP CORPORATION, JACKSON, MICHIGAN

SALES OFFICES: BURBANK, CALIF. • DAYTON, OHIO • HAGERSTOWN, MD. • HIGH POINT, N. C. • MIAMI SPRINGS, FLA. MINNEAPOLIS, MINN. • PORTLAND, ORE. • WICHITA, KAN. • TORONTO, CANADA

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

PENNSYLVANIA RAILROAD

Scenic Little Juniata River in the Alleghanies

The Pennsylvania Railroad is the busiest privately owned railroad in the world — chartered in 1846 to construct a railroad from Harrisburg to Pittsburgh, a distance of 249 miles. It has since expanded to a system embracing 10,192 miles of first track and 15,018 miles of second, third and fourth track and sidings. Its passenger service contains every type of modern equipment for safe travel.

The Pennsylvania Railroad pioneered in the use of steel rail to replace iron, and today uses the heaviest T-rail manufactured; namely, the 155# section, thus making possible a rigid roadway maintained to the highest standard.

THE P. & M. CO.

CHICAGO • NEW YORK • DENVER • ST. LOUIS • BOSTON • ST. PAUL •
WASHINGTON • CLEVELAND • SAN FRANCISCO • MEXICO CITY

TM

A sound investment in modern suburban motive power

Assign Train Master power to suburban service
and you get—2400 horsepower for
fast acceleration and sustained speed
... large steam capacity for comfortable train heat ...
dual-control for elimination of turn-around time loss.

Train Master performance delivers the best
on local or rush-hour schedules—and
protects *all* other motive power jobs on the road.

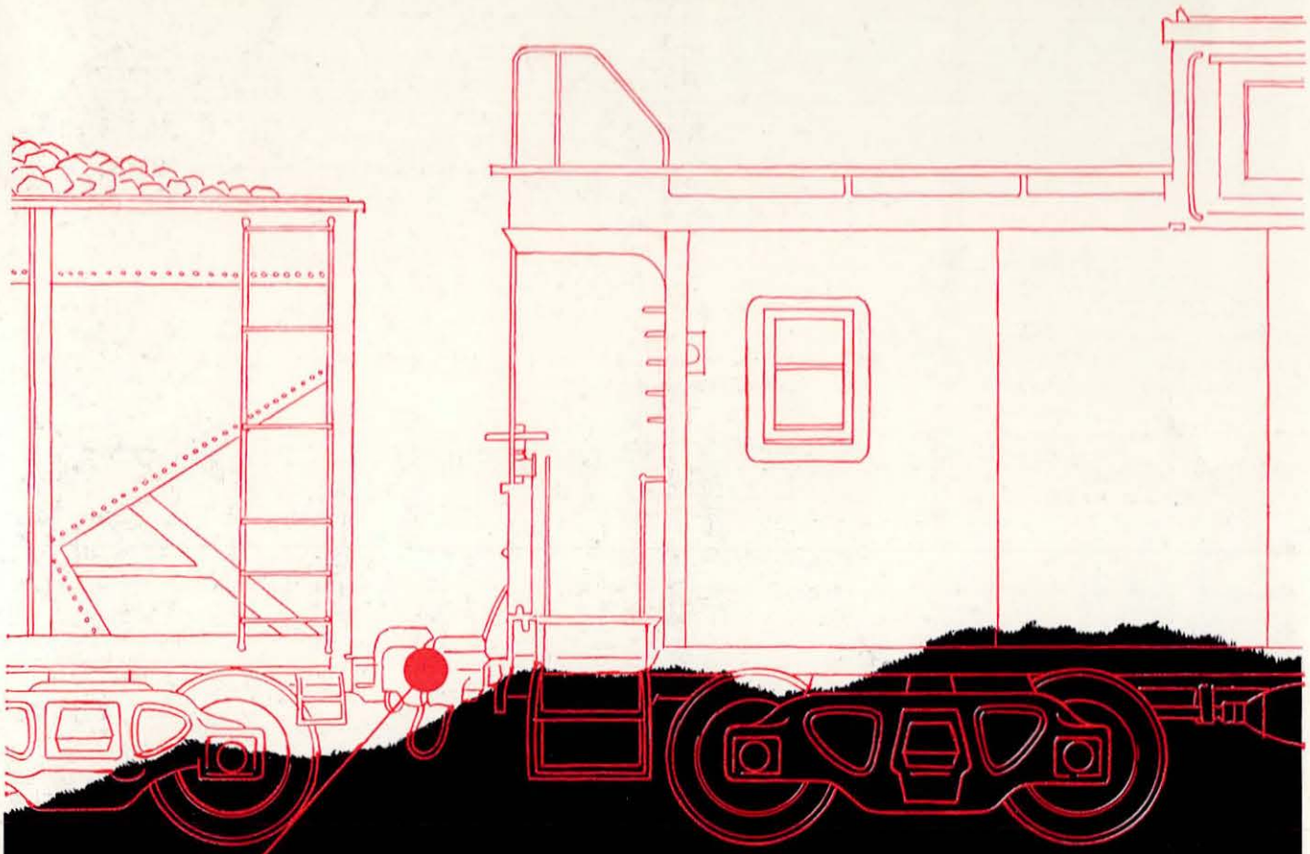
Versatility ... performance ...
those are the plus values of the Train Master
that can make major contributions to operating economy
in suburban service—in *all* classes of service.
Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE

a name worth remembering when you want the best

DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • PUMPS • SCALES
RAIL CARS • HOME WATER SERVICE EQUIPMENT • FARM MACHINERY • MAGNETOS

Morning
U.S. CITIES



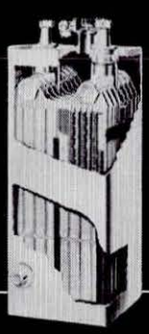
SHOCKS
don't hurt an
EDISON battery

STEEL negative plate! STEEL positive plate! STEEL cell container!

When you buy an EDISON, you get the battery with the *all-steel* cells . . . the strongest construction known. Even the severe shocks incidental to freight-train operation don't hurt it. What's more, it's unharmed by *fast* charging or the overcharging and over-discharging inherent in this class of service.

Equally important is the *unusually long life*. One railroad, for instance, gets an average of 26.18 years from its car-lighting batteries. Add this to the other features and you'll see why an EDISON gives the lowest depreciation and maintenance costs of any battery. For more information, ask for Bulletin S.B. 3802; consult your nearest Edison field engineer.

Most Dependable Power
—Lowest Over-all Cost
. . . you get both
with an EDISON



EDISON
Nickel • Iron • Alkaline
STORAGE BATTERIES
Edison Storage Battery Division of
Thomas A. Edison Incorporated, West Orange, N.J.

Over 50 diesel road units on the Chicago Great Western Railway use . . .

STANDARD HD
TRADE MARK
Oil

• Serving one of the great industrial and agricultural sections of the country, the Chicago Great Western Railway has been quick to utilize the efficiency and economy of diesel locomotives in its heavy-duty operation.

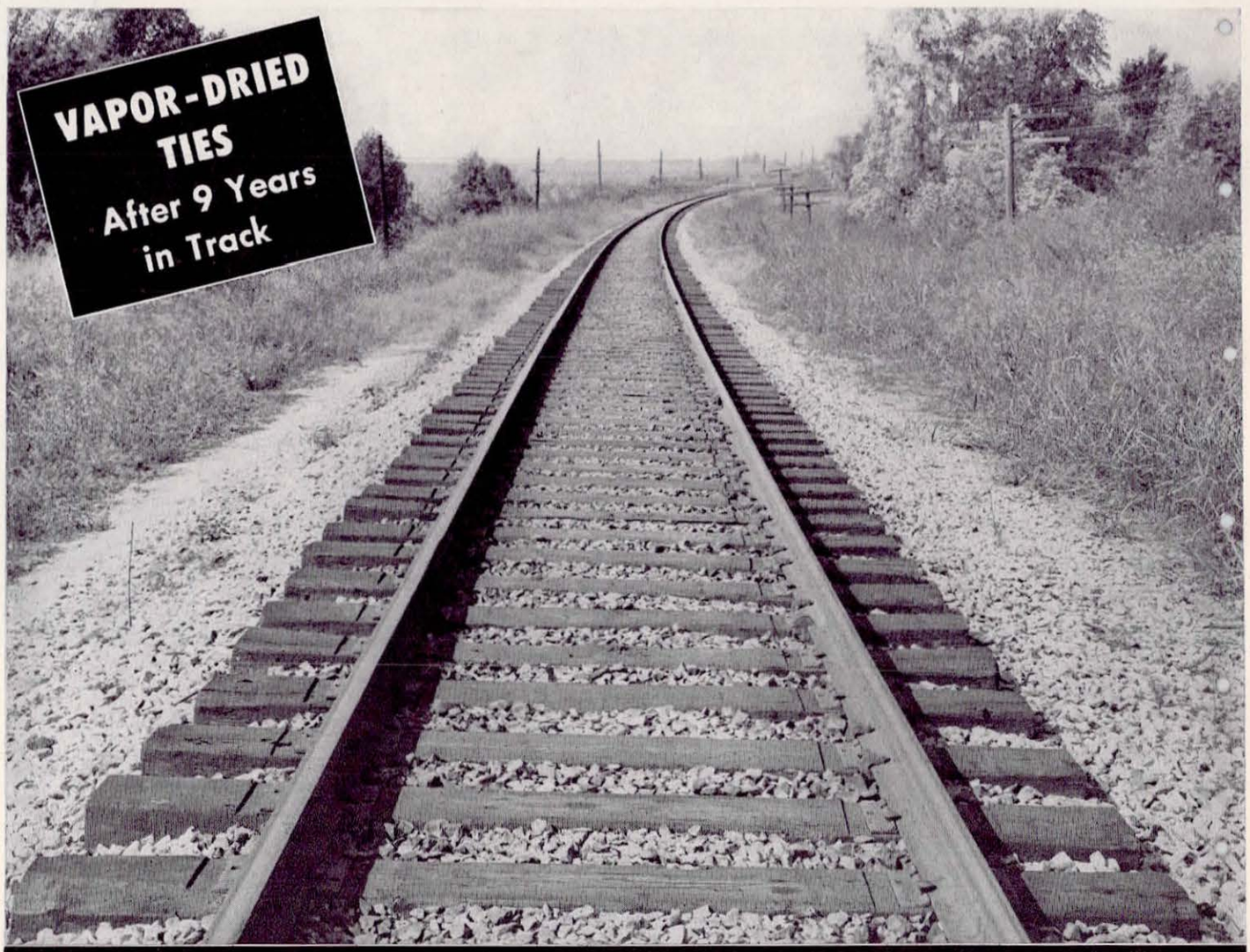
Used in over 50 diesel passenger and freight road units, STANDARD HD Oil has served on this hard-working railway for over five years. It has provided clean, protective lubrication that in turn has helped keep diesel maintenance costs low.

The Chicago Great Western is one of the more than 70 railroads that now use STANDARD HD oil. This acceptance indicates the ability of this superior heavy-duty lubricant to provide efficient and economical lubrication for all types of diesel locomotives. Make that your basis for investigating STANDARD HD oil. A Standard Oil Railway Department representative will be glad to help you. For his services, write: Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

STANDARD OIL COMPANY STANDARD *(Indiana)*

Study These Pictures . . .

it could be the
most important thing
you'll do today!



TAYLOR-COLQUITT CO.

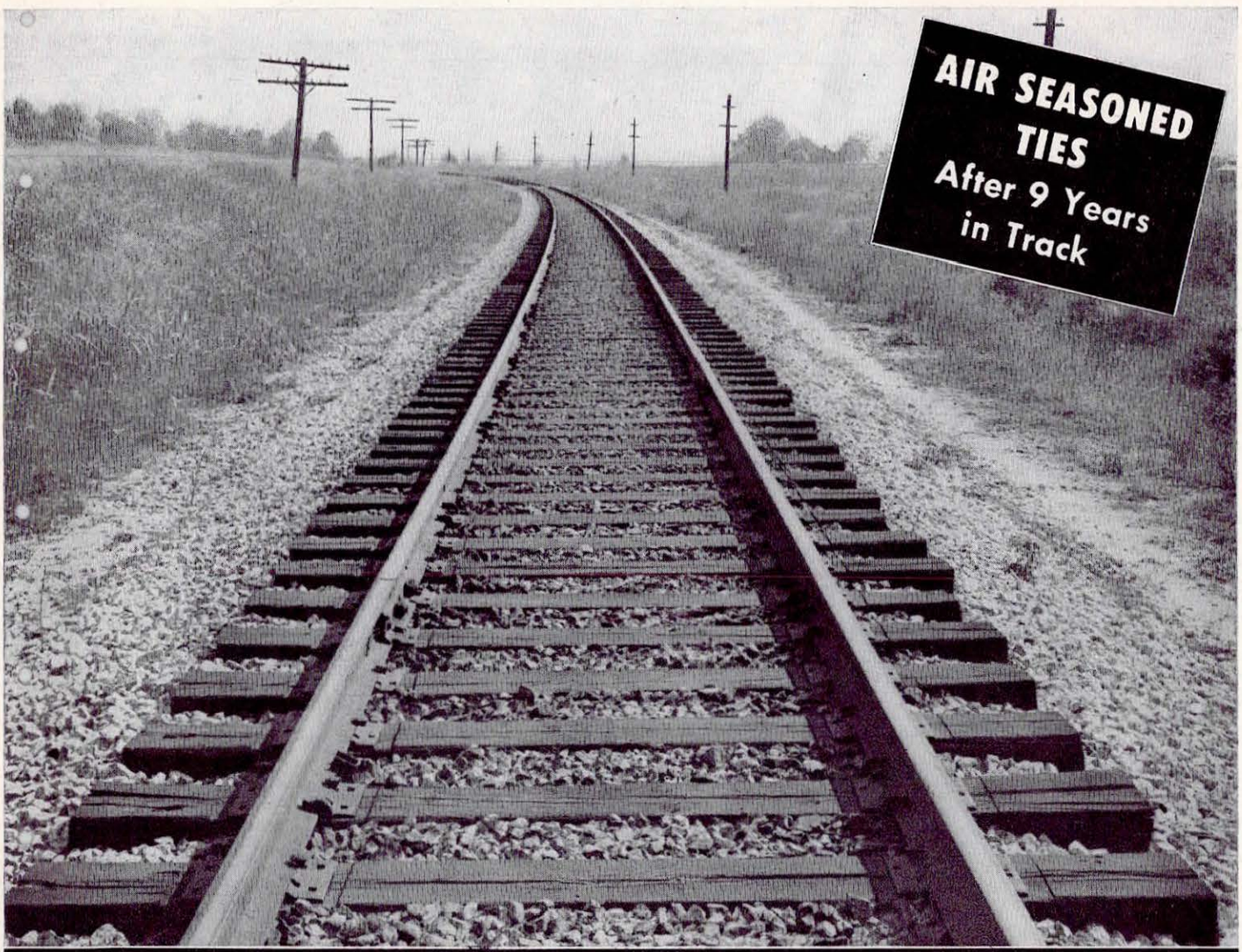
Important? Yes, when you consider that it could lead to longer tie life and eventually saving as much as a hundred dollars a mile annually for your road.

Here you see two groups of ties which have been in heavily-traveled track for nine years. Both were chosen from red oak timber of the same quality. Both got identical preservative treatment. One group was thoroughly air-seasoned according to established practice. The other was Vapor-Dried* right after cutting.

The better condition of the Vapor-Dried ties is apparent at a glance. They show none of the serious splits and checks suffered by the air-seasoned ties after nine summers and winters. Want to bet that the Vapor-Dried ties don't last longer?

This evidence is even more convincing when you see it with your own eyes, so we invite you or any of your maintenance officials to make a personal inspection. Let us also show you the Vapor-Drying process in operation and explain recent improvements which make it better and cheaper than ever before. How about making a date now? And ask for "The Vapor-Drying Story" which explains that hundred-dollars-a-mile eventual saving.

*Process patented.



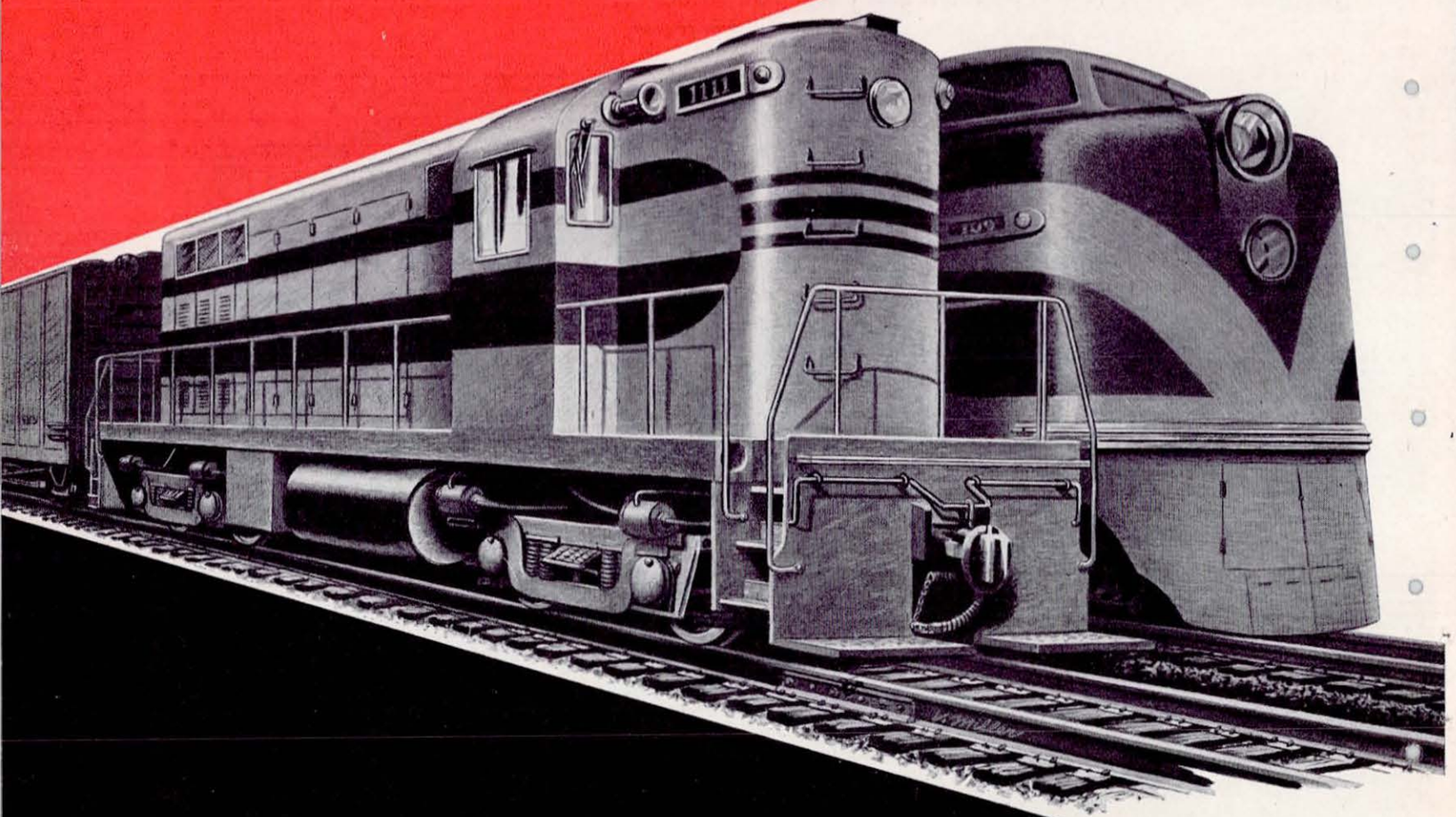
Spartanburg, South Carolina

TAYLOR-COLQUITT CO. TIMBER CONSERVATION TC

THE IMPROVED

Exide-Ironclad

For Diesel Starting



WHEN IT'S AN

EXIDE-IRONCLAD

YOUR DIESELS START

1888 – DEPENDABLE BATTERIES FOR 65 YEARS – 1953

Your Best BATTERY BUY...AT ANY PRICE

BEST because it assures quick breakaway and fast acceleration of engine to firing speed . . . high power reserve at all times for operation of control equipment . . . high availability—uninterrupted on-line service . . . low costs of operation, maintenance, depreciation . . . inherent safety . . . clean, quiet operation . . . interchangeable sizes for diesel-electric locomotives of every make.

Type MV-17-D Exide-Ironclad Battery—284 ampere hours—for cranking switching locomotives of 600 hp and larger.

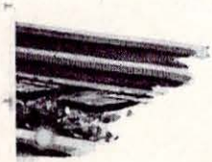
Some of the many outstanding features

The long-life grids now contain corrosion-resistant SILVIUM. New polyethylene insulating bar seals bottom of tube and retains active material—thus maintaining high battery capacity for a longer working life. Improved negative plates. New sealing compound. Shock-proof molded container. New unbreakable plastic vent plugs.

Type MV-25-D Exide-Ironclad Battery—426 ampere hours—for cranking road locomotives of the larger sizes.

THE ELECTRIC STORAGE BATTERY COMPANY
Philadelphia 2
Exide Batteries of Canada, Limited, Toronto

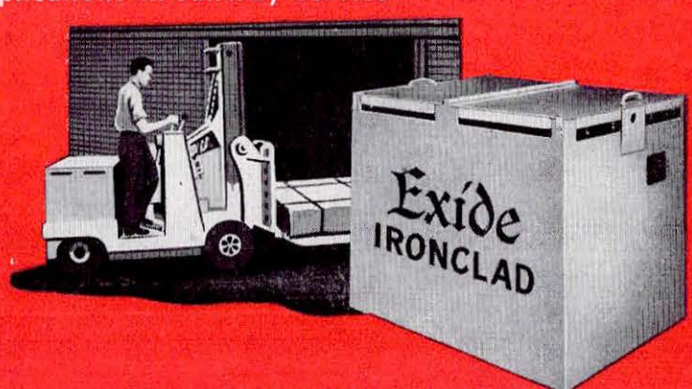
"EXIDE-IRONCLAD" and "SILVIUM" *Reg. T.M. U.S. Pat. Off.*



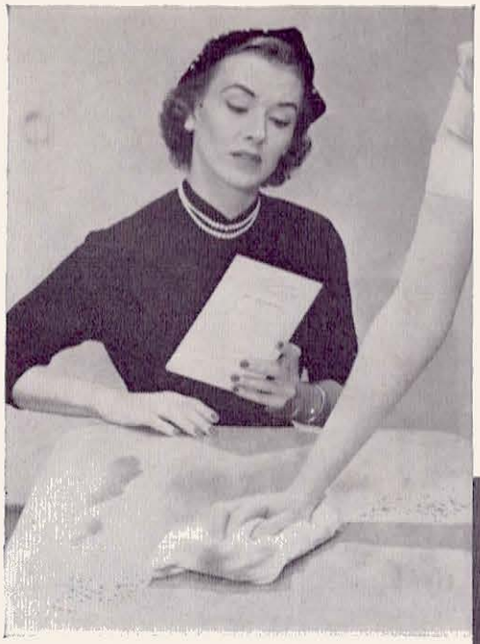
EXIDE-IRONCLAD BATTERIES

Many types, many sizes, many capacities for all heavy-duty applications in railway service

FOR CAR LIGHTING AND AIR-CONDITIONING



FOR BATTERY-ELECTRIC TRUCKS



LOOKS CAN KILL...YOUR BUSINESS!

NAPERY

CAN MAKE THE DIFFERENCE

- Quiet Atmosphere
- Better Sanitation
- Inviting Appearance
- Greater Protection From Spillage

Simtex Napery stays gleaming white and fresh longer, thanks to the exclusive Basco finish.

Simtex

SIMTEX MILLS, 40 WORTH STREET, NEW YORK 13, N. Y.
DIVISION OF SIMMONS COMPANY, MAKERS OF THE FAMOUS BEAUTYREST MATTRESS

SIMTEX COVERS MORE TABLES THAN ANY OTHER MAKER IN AMERICA

WESTINGHOUSE RAILROAD RADIO

PROVED IN NIGHTMARE TEST

APPROVED

INLAND LIME & STONE COMPANY

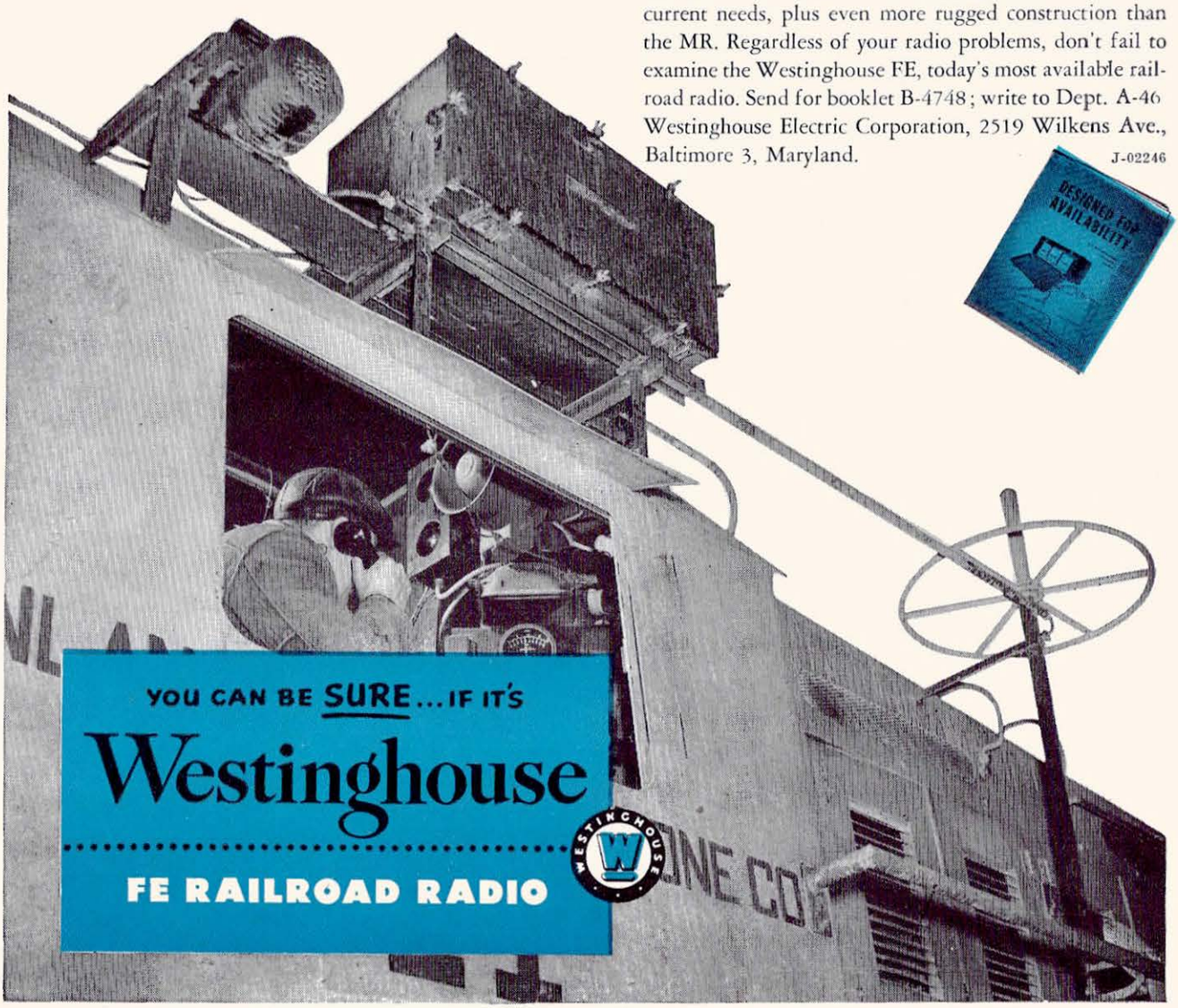
Inland Lime and Stone Company operates seven trains and eleven locomotives on 21 miles of main line and siding track in a quarry and dockside area. Conditions are severe, ranging from earth-shaking blasting to loading a fifty-ton car in less than five minutes.

AND — the electric locomotive cabs occupy one end of a gondola! That means that five-yard (approximately 7½ tons) bites of limestone are dropped into the gondola end, smack beside the cab *and the railroad radio.*

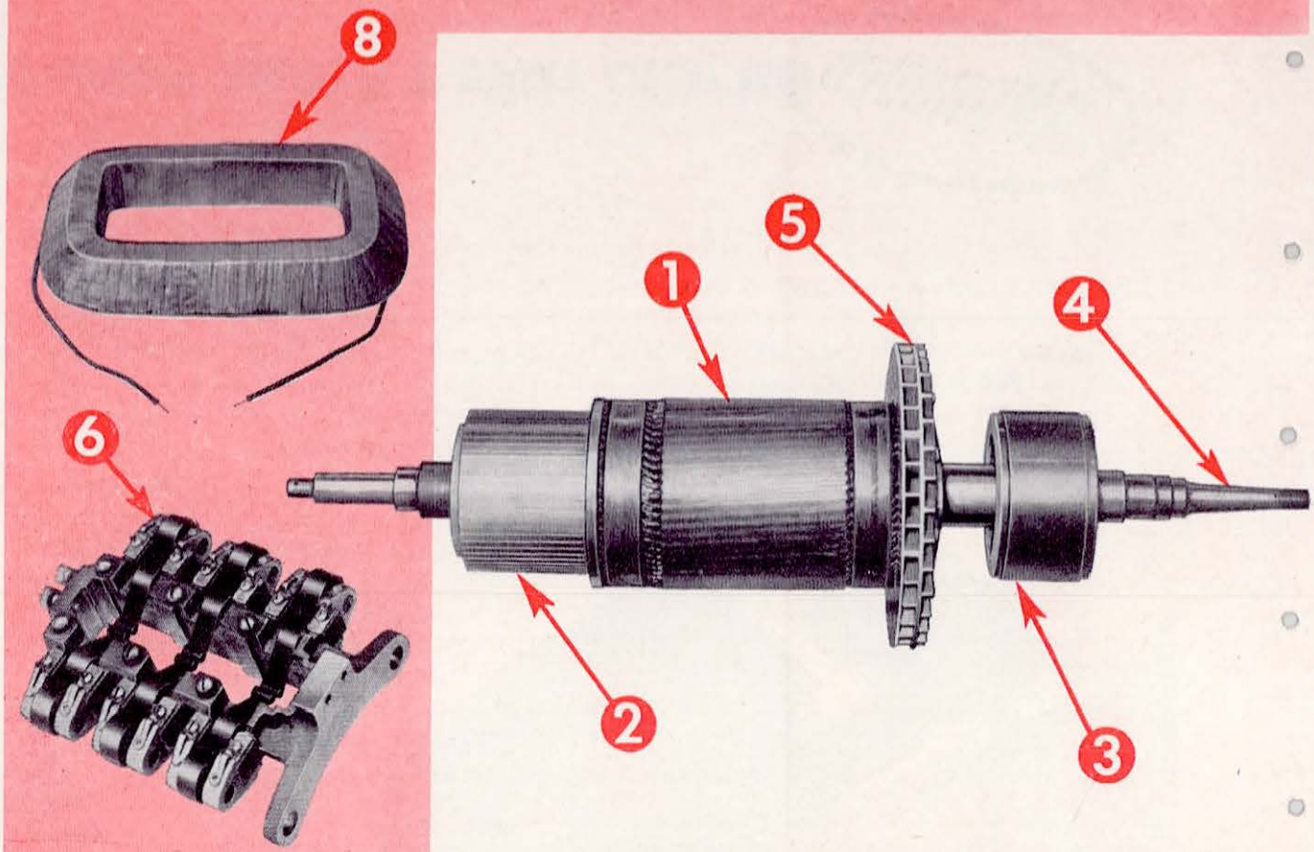
These rough conditions tell plenty about what a railroad radio can stand. In selecting railroad radio, Inland came to Westinghouse. (Since they required single frequency operation, they selected the Westinghouse MR radio, the FE predecessor).

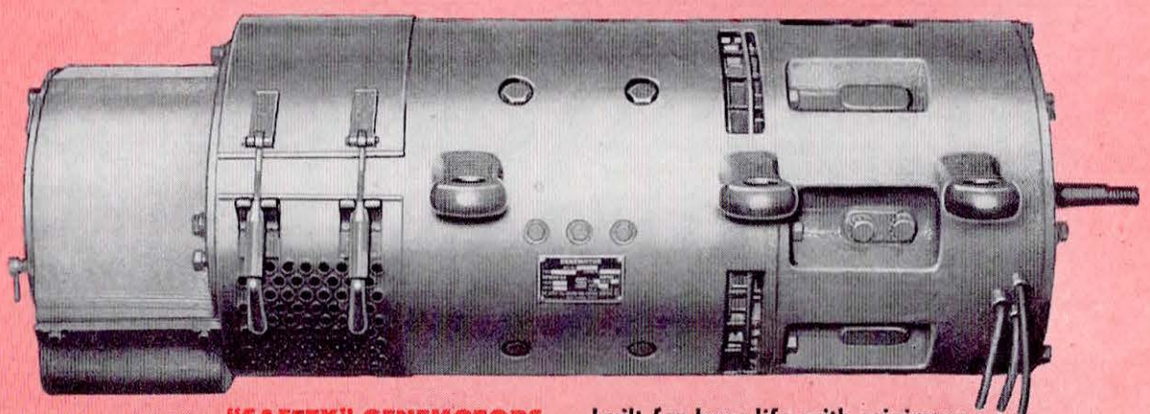
For your railroad, the new Westinghouse FE meets all current needs, plus even more rugged construction than the MR. Regardless of your radio problems, don't fail to examine the Westinghouse FE, today's most available railroad radio. Send for booklet B-4748; write to Dept. A-46 Westinghouse Electric Corporation, 2519 Wilkens Ave., Baltimore 3, Maryland.

J-02246



"SAFETY" 25 and 30 kw GENEMOTORS





"SAFETY" GENEMOTORS . . . built for long life with minimum operating cost, have been time-tested in service. They are available in 40, 80 and 140 volts nominal ratings and with 20 or 32HP AC, 60 cycle 220 volt motors.

HAVE UNPARALLELED PERFORMANCE RECORDS

establishing them as standard equipment for all cars with heavy electrical loads...

HERE ARE NINE REASONS WHY...

1. **an armature** . . . sleeve mounted and readily removable from shaft as a separate unit
2. **a commutator** . . . with bars of hard drawn silver bearing copper . . . assembled with highest grade mica
3. **a rotor, armature and fan** . . . each dynamically balanced individually before application to the shaft, assuring complete interchangeability
4. **an armature shaft** . . . of high grade alloy steel accurately ground to size . . . with keys and keyways held to close tolerances . . . precision clutch fit
5. **a fan** . . . of rugged construction . . . dynamically balanced
6. **brush boxes** . . . with spring tension units designed as separate components accurately set at the factory for proper pressure, assuring constant generator performance
7. **a polarity changer switch** . . . positive in operation . . . base hermetically sealed
8. **field coils** . . . all winding thoroughly vacuum impregnated . . . with added oil and moisture protection
9. **AAR specifications** . . . all temperature values — armature, commutator, field coils, interpole coils . . . considerably below AAR temperature limits at all operating conditions

ADDING UP TO THIS...

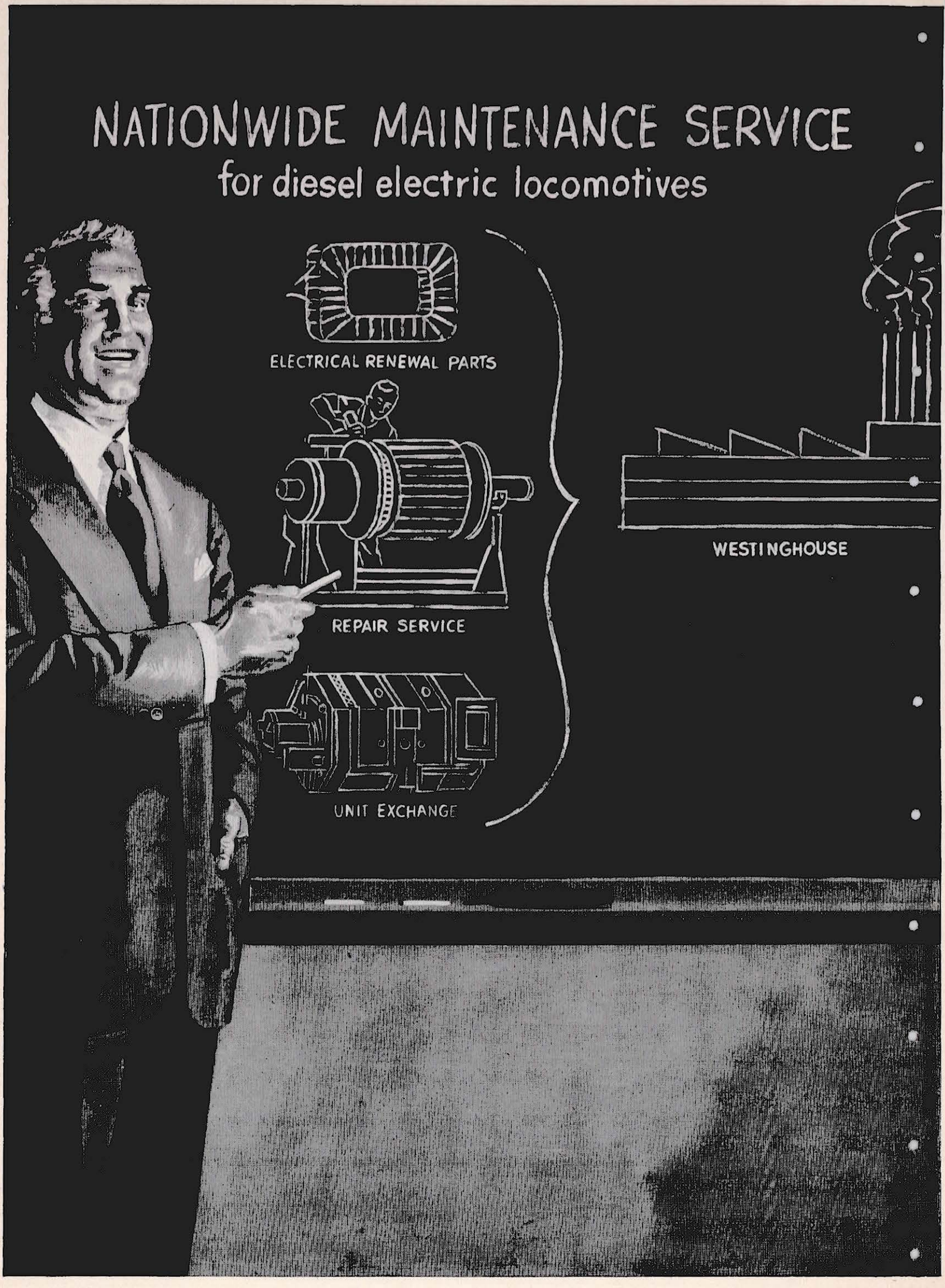
"Safety" Genemotors which assure...

- **continuous power for all air conditioning, electrical equipment and battery charging while cars are en route**
- **available standby power for pre-cooling cars**

THE SAFETY CAR HEATING AND LIGHTING COMPANY INC.

NEW YORK CHICAGO PHILADELPHIA ST. LOUIS SAN FRANCISCO NEW HAVEN MONTREAL

SAFETY COMPANY PRODUCTS INCLUDE: Air-conditioning Equipment • Genemotors • Generators • Fans • Regulators • Blower Units Lighting Fixtures • Switchboards • Luggage Racks • Motor Alternators • Dynamotors • Motor Generators • Dual Voltage MG Sets


NATIONWIDE MAINTENANCE SERVICE
for diesel electric locomotives
ELECTRICAL RENEWAL PARTS
REPAIR SERVICE
UNIT EXCHANGE
WESTINGHOUSE

New plan for renewal parts and Unit Exchange announced by Baldwin-Westinghouse

Renewal parts, apparatus repair, and Unit Exchange of locomotive electrical equipment are now the sole responsibility of Westinghouse. Previously, all renewal parts and Unit Exchange had been handled through Baldwin-Lima-Hamilton, and the repair service through Westinghouse. Under this new plan, Westinghouse will be able to speed and simplify all electrical *transactions*—renewal parts, Unit Exchange and repair service. Baldwin will continue to handle renewal parts other than those used in the main electrical system.

Renewal Parts—A ready supply of genuine Westinghouse renewal parts is assured by strategically located Renewal Parts Warehouses. These are backed by additional stocks at headquarters plants . . . eliminating your need of carrying large stocks.

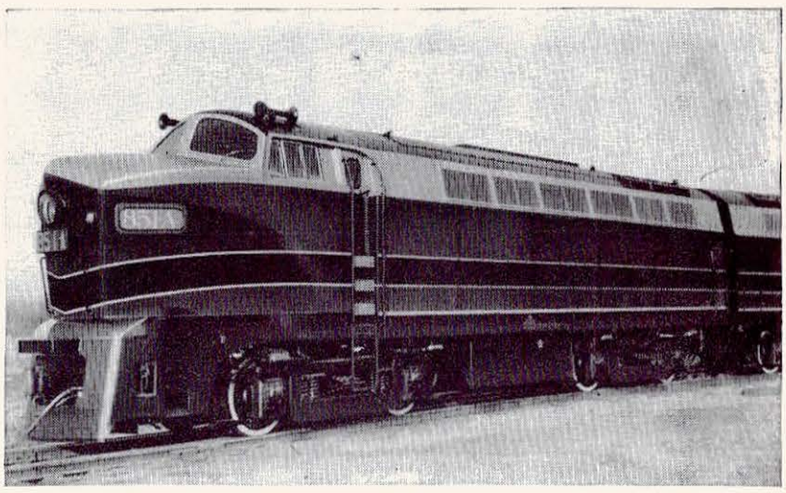
Repair and Return—A nationwide service of 38 repair plants with 22 of these specializing in diesel-traction repairs. These plants have the men, materials, and methods to do your repair jobs right. When necessary, they can provide round-the-clock service for repair work of any nature.

Unit Exchange—Under this Unit Exchange plan, you can get prompt replacement of Westinghouse equipment such as traction motors, generators, auxiliary generators and exciters, and blower motors. This can save money three ways: It relieves you of stocking spare equipment, gets locomotives back in service faster and eliminates the need for emergency repair crews.

For more information, call the Westinghouse Apparatus Sales Office serving your location. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-93497

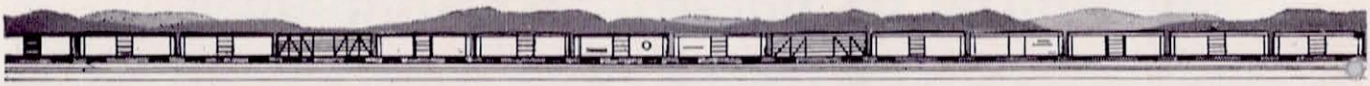
YOU CAN BE SURE...IF IT'S Westinghouse

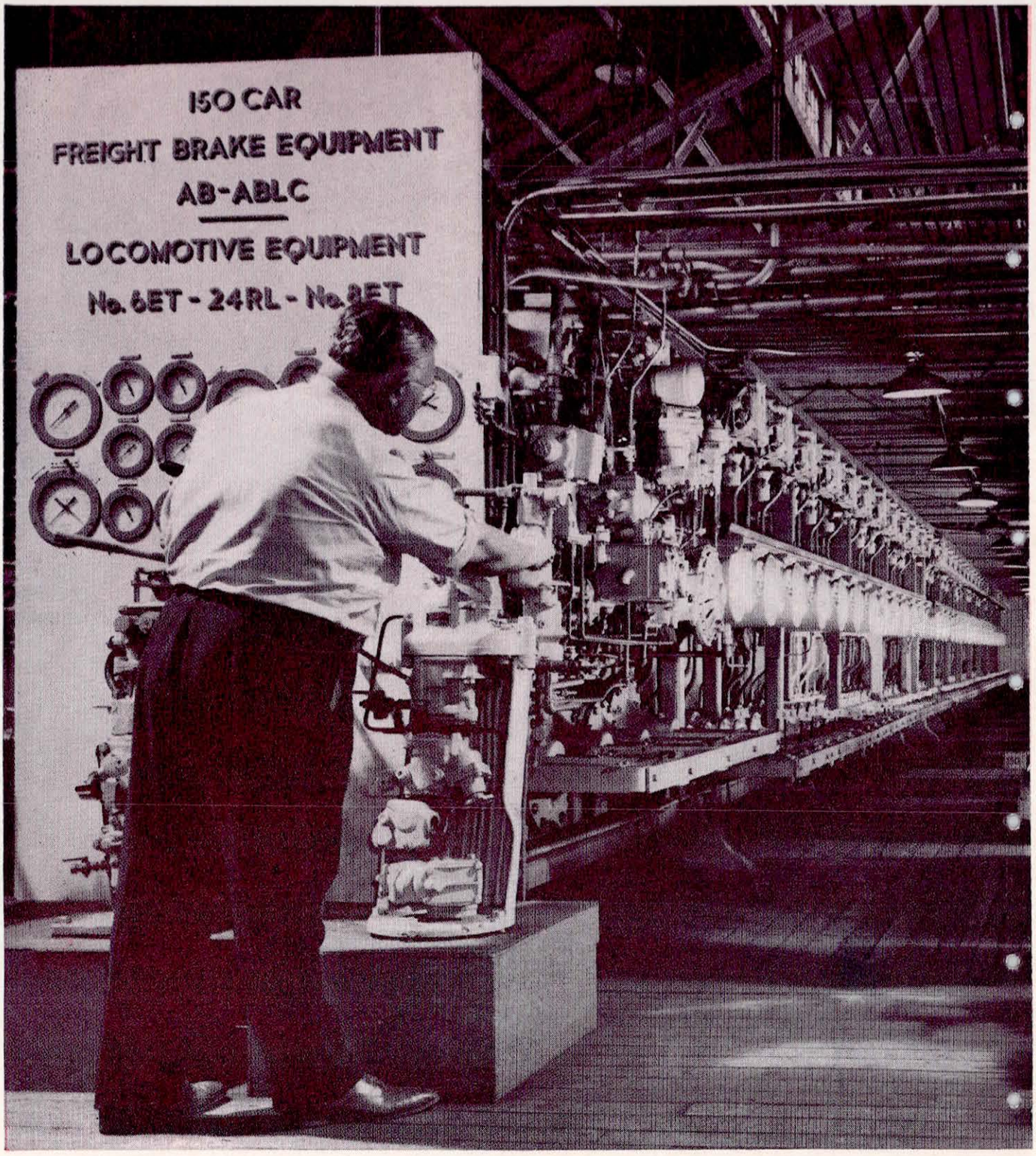
Top-Quality Repair Service—Apparatus repairs require highly skilled craftsmen. A typical example is this job of undercutting the mica on a commutator.



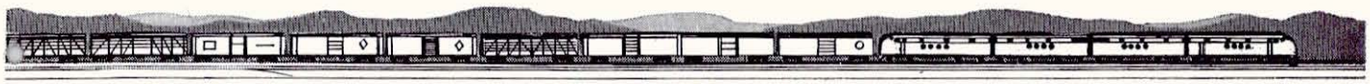
Keeps Them Rolling—Repair processes, resulting from intensive research, have been the key to maintaining lower diesel electric operational costs.

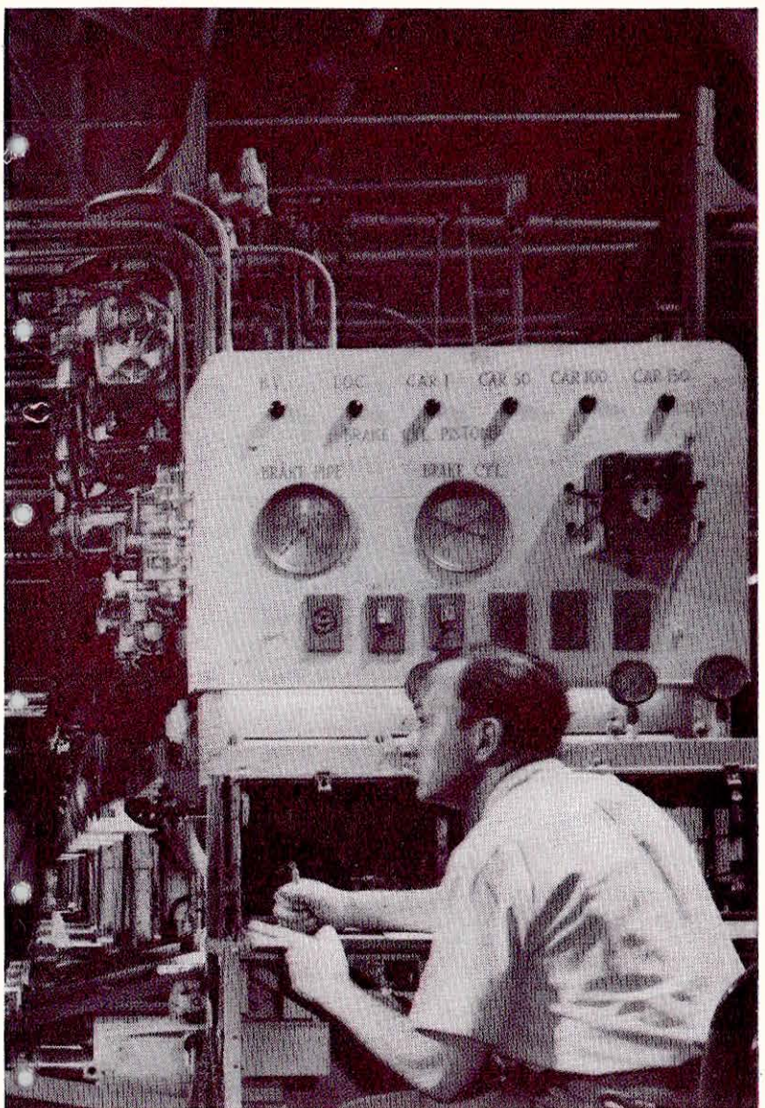
This "train" never starts....





. . but it makes a thousand stops!





The Westinghouse Air Brake Company's giant test rack includes all of the braking equipment . . . the thousands of feet of pipe, the couplings, valves, tanks and pistons that you'd find on a freight train *150-cars long!*

It's used to test new braking control developments, to determine brake response time, to make certain that new devices will work in perfect harmony with equipment on older-style cars. And it is used by the railroads to duplicate any set of actual braking conditions encountered in day-to-day operations.

The test rack is a permanent part of the famous Westinghouse Air Brake research facilities. It's another example of the thorough testing, the patient probing for perfection, the positive engineering that is behind every Westinghouse Air Brake product.

Here's further evidence of why America's railroads have confidence in Westinghouse. For 83 years this pioneer in braking control devices has cooperated with the railroads. It has helped them maintain their enviable record as America's most dependable transportation system.

Westinghouse Air Brake Company

AIR BRAKE DIVISION

WILMERDING, PA.

To direct popular attention to the remarkable achievements of American Railroads, this advertisement has been run in a national business magazine by Westinghouse Air Brake Co., Air Brake Division.

ALADDIN LUBRICATOR

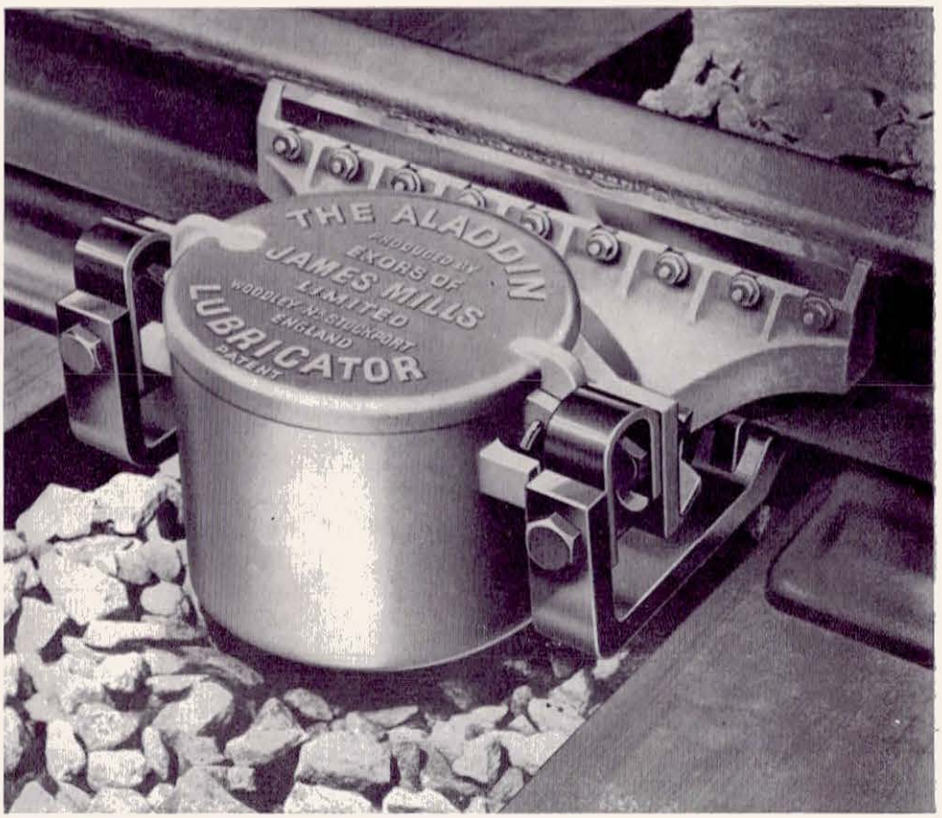
In the last six months

27

U. S. railroads have installed Aladdins

•

You can buy TWO Aladdins without an "A.F.E."



Only one moving part:

The "Aladdin" has no pumps or valves. A spring-loaded piston, the *only* moving part, descends in a cylinder under vibration from traffic—and delivers the required amount of standard grease *automatically* to the running side of the rail.

One-man installation:

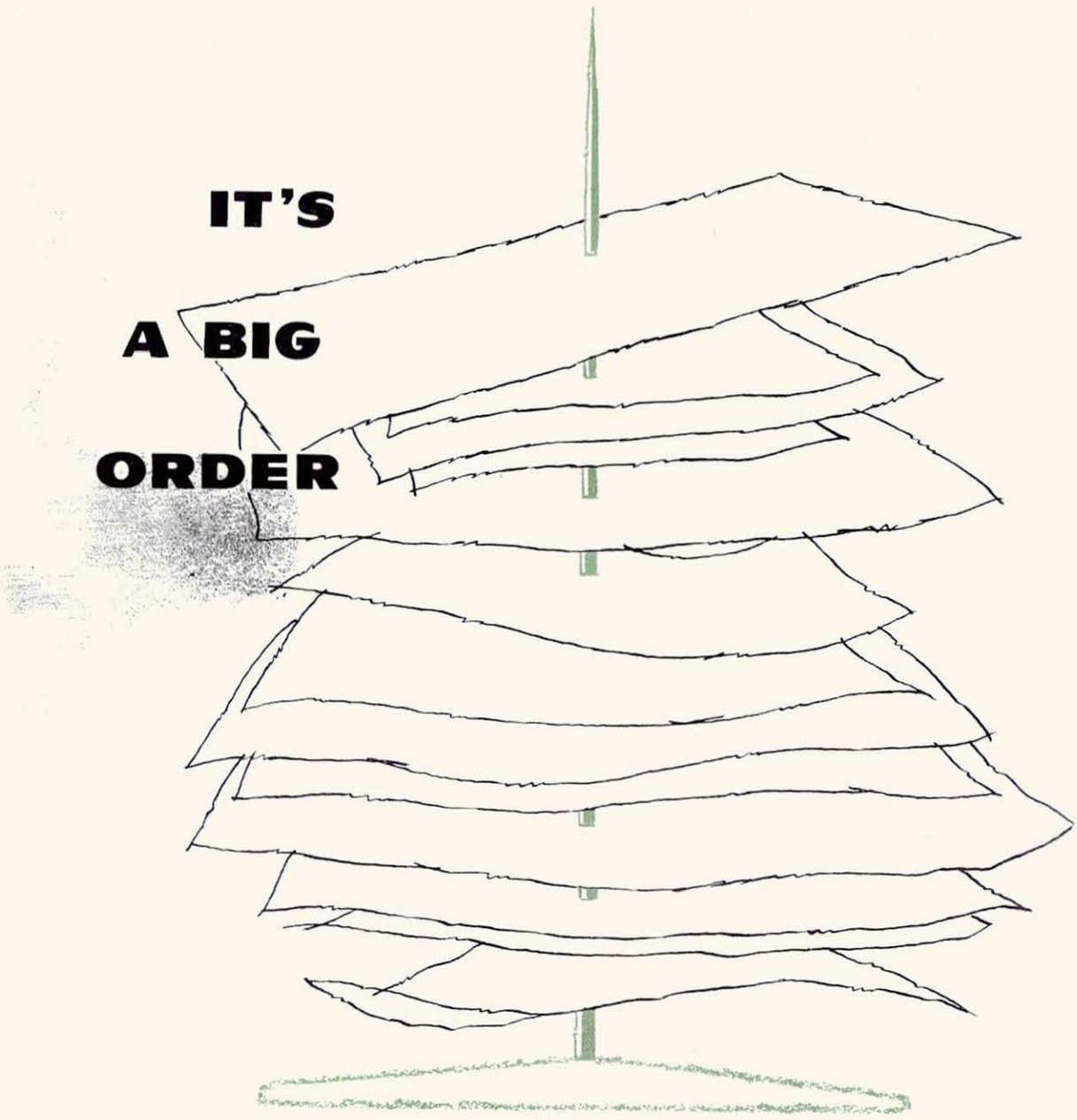
No track alteration, rail drilling or gauge widening is required to install the "Aladdin". And since it weighs only 50 pounds—it can be handled and installed by one man *in less than half an hour.*

Proved performance:

Today, thousands of "Aladdin" Lubricators are in use on main lines... in yards... under one or two-way traffic... in all climates. The "Aladdin's" low cost means you can now economically specify a lubricator for *every* rail wear location. Why not check *your* lubricator requirements today? Write for Bulletin A.

H. T. KENNEDY COMPANY, Inc., 37 Wall St., New York 5, N.Y.

IT'S A BIG ORDER



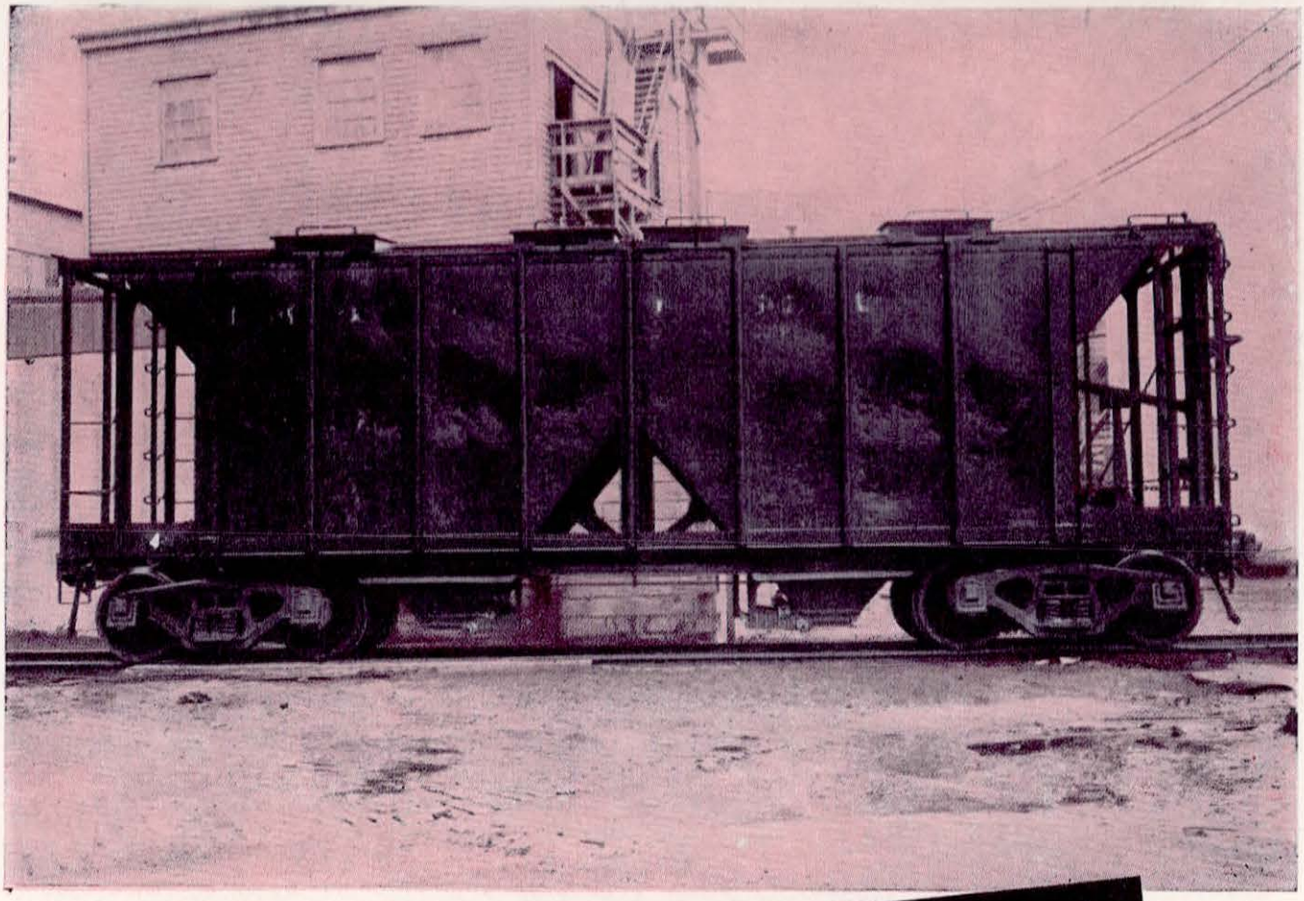
...and we're grateful

Thanks to you, we've just completed a wonderful, successful year—our sixtieth! Naturally, we're proud of this proof of your confidence. We anticipate that in the year ahead we will have to produce even more Hyatt Roller Bearing Journal Boxes for Diesel locomotives, passenger cars —and freight cars, too. That's a big order, and we're grateful for it! Our enlarged plants and new, added facilities are ready to fill your requirements if you are planning for new cars or changeovers, passenger or freight.

We are looking forward to doing an even bigger, better job in 1953! Hyatt Bearings Division, General Motors Corporation, Harrison, N. J., Chicago, Ill. and Oakland, Calif.

HYATT

ROLLER BEARING JOURNAL BOXES



15 MONTHS HAULING SODA ASH . . .

and the Glidden Vinyl-Cote finish is still excellent!

Identification eaten away by corrosive soda ash . . . sides beaten by sledges and crowbars to loosen contents . . . here's a car that's had the full treatment. Yet, the Glidden Vinyl-Cote finish still is in excellent condition . . . good for many more months of service.

An unusual example? Not at all. That's the type of result you, too, can expect when your cars are properly finished with Glidden Vinyl-Cote, the revolutionary car finish that handles most strong alkalies and acids with ease.

There are no special application problems, either, when you use the Glidden Vinyl-Cote System. Under normal outdoor conditions, a car can be finished in a single day. And Vinyl-Cote dries to a hard, yet elastic film that will give many times the usual coating service life.

For complete information about the Glidden Vinyl-Cote System and the competent technical service for adapting it to your specific requirements, write to: The Glidden Company, Railway Finishes Division, Dept. RA-153, 11001 Madison Avenue, Cleveland 2, Ohio. In Canada, The Glidden Company, Toronto.

QUALITY Glidden PRODUCTS

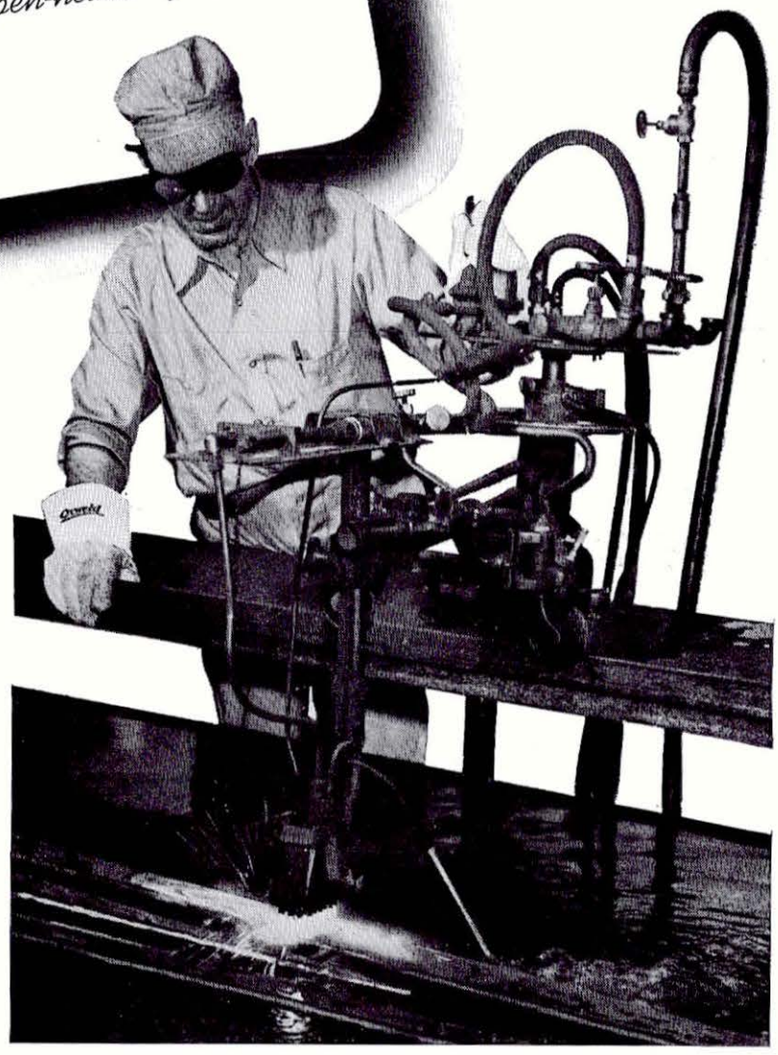
Glidden

RAILWAY FINISHES

Memorandum to:

ENGINEERING AND PURCHASING OFFICERS

Major savings in track maintenance costs are being made by many railroads that have flame-hardened open-hearth frogs and crossings.



Railroad after railroad follows OXWELD'S procedures in constructing simple, efficient frog flame-hardening setups. Thousands of frogs that have been flame-hardened are now in track. These treated frogs are giving far longer service than unhardened frogs — five times longer service and more. This is impressive evidence of the value of OXWELD'S flame-hardening process in reducing maintenance costs on frogs and crossings.

Ask your OXWELD representative for details or write for Booklet F 7007 which gives complete information.

OXWELD RAILROAD SERVICE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
Carbide and Carbon Building Chicago and New York
In Canada:
Canadian Railroad Service Company, Limited, Toronto

OXWELD RAILROAD SERVICE

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

Dieselization Enables "Old Reliable" To Boost Through-Freight GTM 56%

The Louisville & Nashville has increased gross ton miles per train hour in through-freight service by 56% through dieselization. Freight tonnages per train throughout the system have increased 34%.

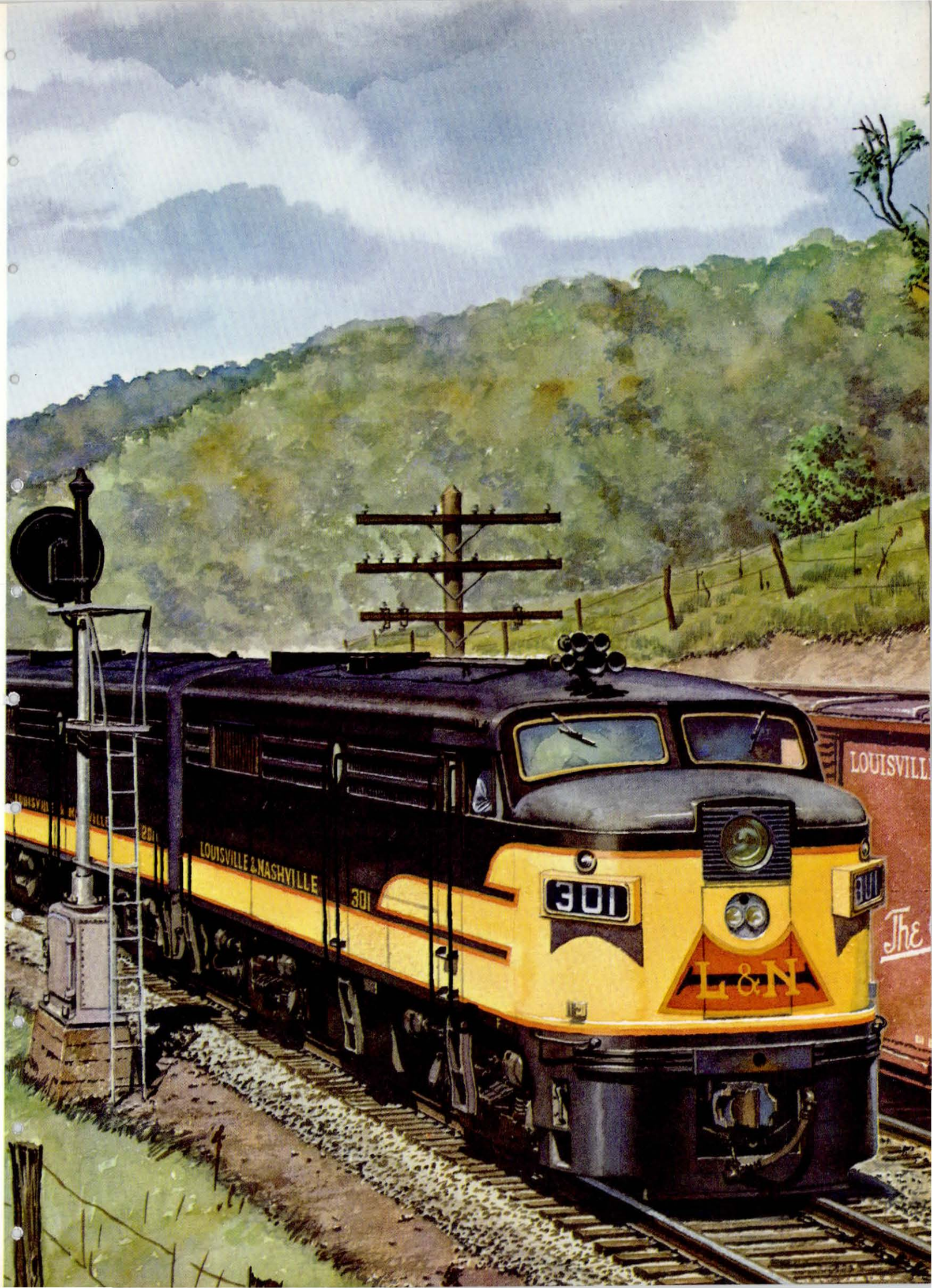
A fleet of 134 Alco-GE diesel-electrics is playing a leading role in this increased efficiency. As an example of high utilization, the L&N uses only nine 1600-hp Alco-GE freight units to handle all 30 round trips in daily fast freight service between Cincinnati and Louisville.

Rapidly nearing full dieselization on many of its divisions, the "Old Reliable" plans to use Alco-GE locomotives exclusively between Cincinnati, Louisville, and Atlanta . . . one more reason why this great railroad is winning more tonnage to the rails.

113-306

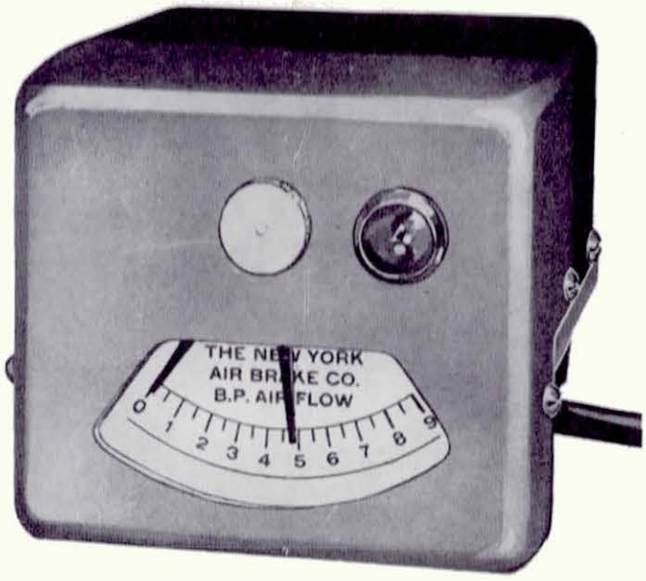
Alco GE

AMERICAN LOCOMOTIVE and GENERAL ELECTRIC


LOUISVILLE & NASHVILLE
301
301
L&N
LOUISVILL
The

What the

Type "B" BRAKE PIPE FLOW INDICATOR



Can Tell You . . .

That something has happened to change radically the normal equilibrium of brake pipe pressure in a charged brake system. *This can mean that:*

- The conductor is making a brake application.
- The train has broken in two.
- The brake pipe leakage has increased.

OR

It Can Tell You

That flow into the brake pipe of newly made-up trains is excessive. *This can mean that:*

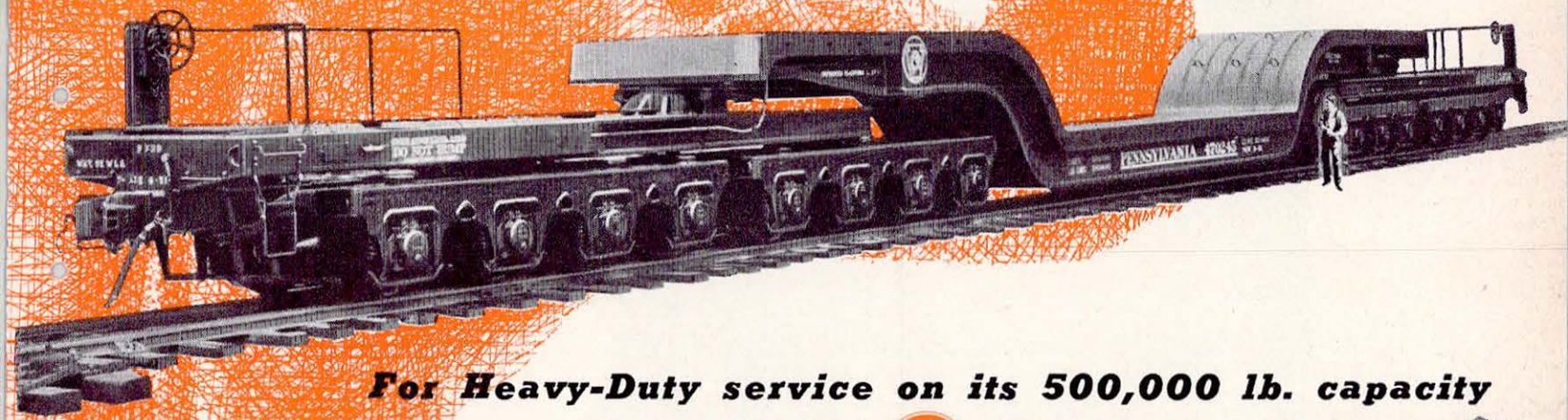
- The train system leakage is excessive.
- The brake test can not be made.

Mounted in the locomotive cab. Available for operation on 32 volts or 64 volts. *Write for complete information.*

The New York Air Brake Company

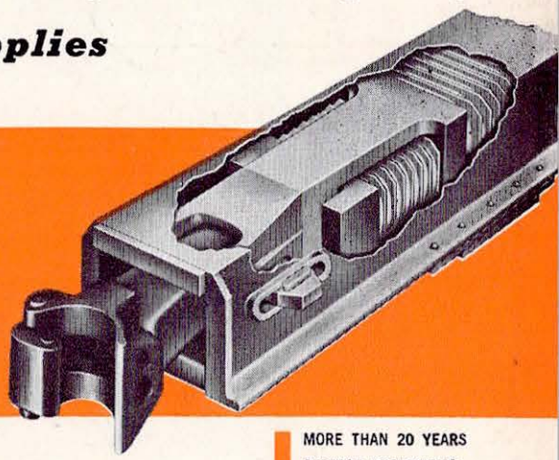
420 Lexington Ave., New York 17, N.Y. Plant: Watertown, N.Y.

"STRONGMAN" ON WHEELS



For Heavy-Duty service on its 500,000 lb. capacity well car, Pennsylvania applies

WAUGHMAT *Twin Cushions*®



MORE THAN 20 YEARS SERVICE EXPERIENCE ON AMERICAN RAILROADS

A.A.R. APPROVED UNCONDITIONALLY

As everyone knows, Twin Cushions are practically standard equipment, on modern streamliners, are widely used on stock cars, refrigerator cars, in symbol box car service and on cabooses.

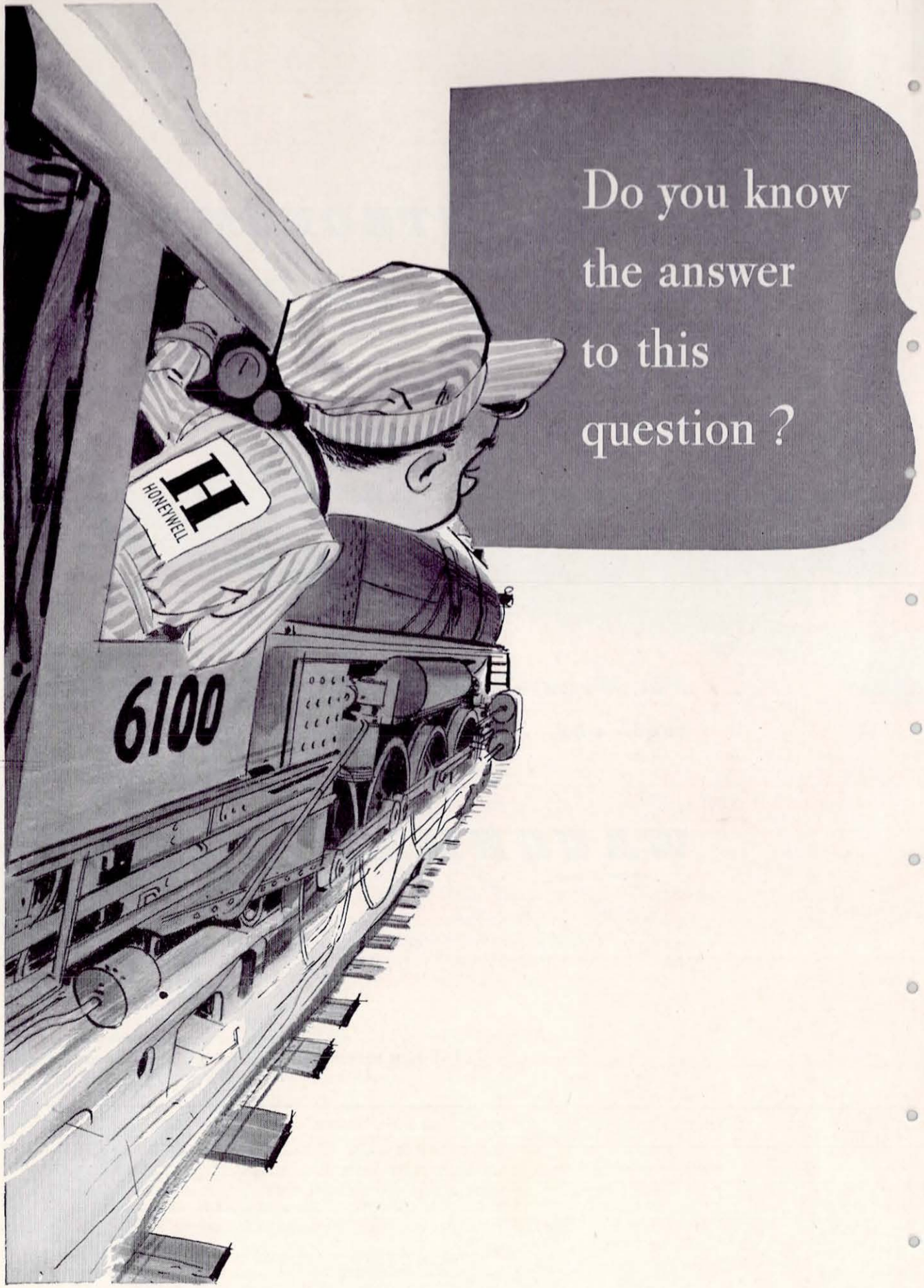
But there is an application of Twin Cushions less frequently encountered . . . protecting cars and lading in *heavy duty service*.

For that kind of service, the Pennsylvania Railroad knew the type of cushioning equipment that was needed . . . knew that Twin Cushions would provide extraordinary impact protection for car and lading. Knowing this, the Pennsylvania equipped its new 500,000 pound capacity well car with Waughmat Twin Cushions.

Twin Cushions, having exceptional capacity, never go solid, never permit of metal-to-metal contact even at high speeds of impact. For car and lading protection in *any type of service* specify Waughmat Twin Cushions. Can be applied to new or existing cars.

WAUGH EQUIPMENT COMPANY

New York • Chicago • St. Louis • Canadian Waugh Equipment Company: Montreal


Do you know
the answer
to this
question ?
HONEYWELL
6100

• *Two years ago the price of car heating systems was higher than it is now*

• *Costs of all materials and labor have risen steadily in this two-year period*

Why, then, do the nation's railroads pay less for car heating systems today?

One word answers this question—competition! When Honeywell entered the picture, railroads, for the first time, started to receive the natural benefits of outright competition in the car heating field. That's the reason—and the only reason—*railroads are paying less for car heating systems now than they did 2 years ago!*

Look at the benefits to the railroad industry—evident since Honeywell entered the passenger car heating controls field:

* *the cost of passenger car heating under competitive bidding has been substantially reduced.*
* *passenger car heating systems have been greatly simplified with a marked reduction in maintenance parts.*
* *steam piping has likewise been simplified with a significant reduction in steam consumption for car heating.*

Competition like this has aided the railroad industry before. Notable examples are the progress and development of car lighting, car electrical equipment and diesel locomotives when competition became a factor in the buying decisions of this equipment.

Now, *competition is paying off* in car heating controls as noted by the facts above. The advantage of selection and comparison are yours in this important railroad equipment field.

Honeywell makes it easy for you to investigate the outstanding performance records of Honeywell controls before you make any important buying decision. Just contact one of Honeywell's 104 branch offices located in key cities from coast to coast. Valuable technical information will be yours for the asking—as will the service of experienced control engineers.

On your next car heating job—why not call Honeywell? It costs nothing to find out what competitive bidding and long experience in the control field can mean to your railroad.

MINNEAPOLIS **Honeywell**

H HONEYWELL

Transportation Division

Today Honeywell Moduflow car heating systems are proving themselves in use on the cars of twenty different railroads across the nation.

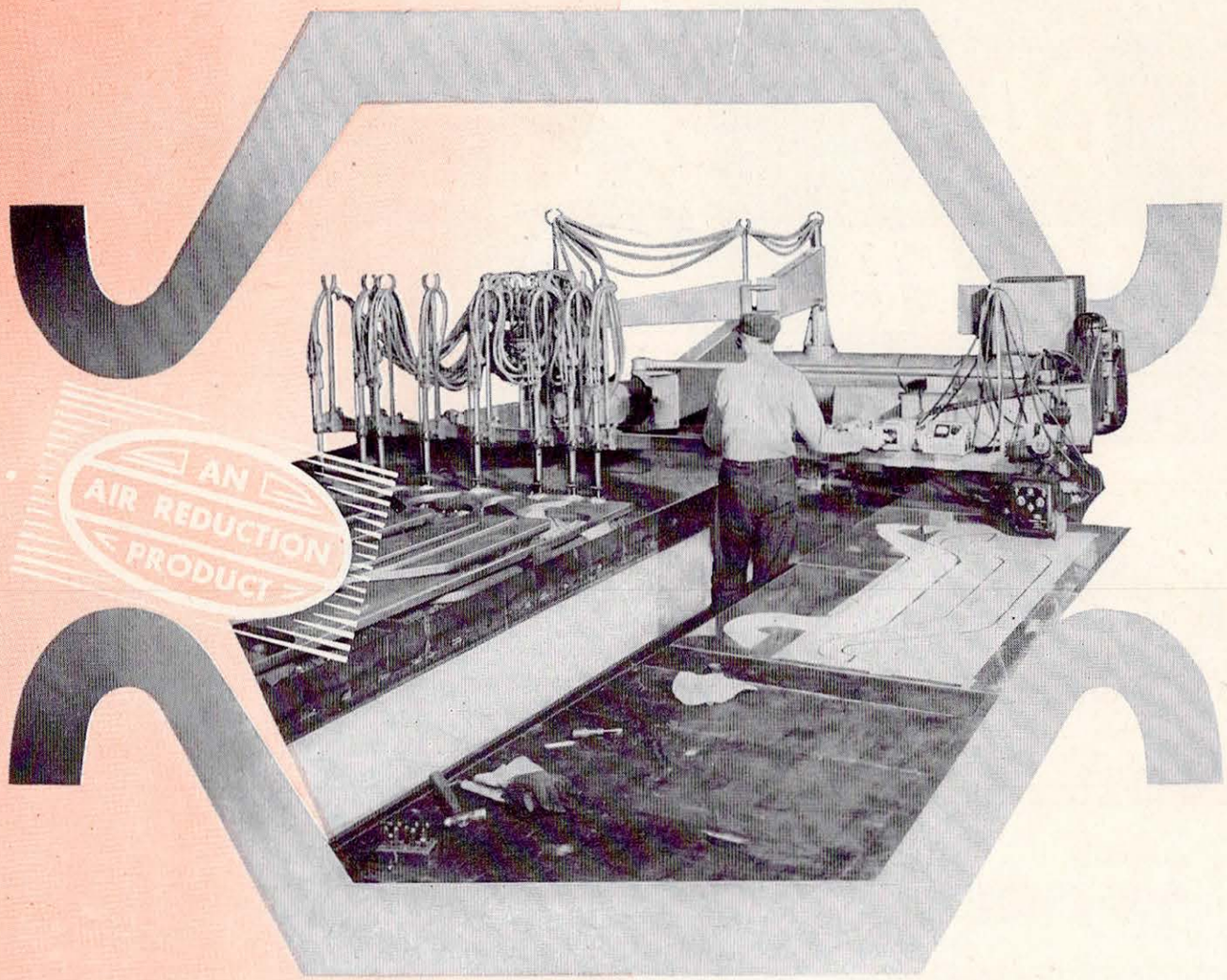
AT THE FRONTIERS OF PROGRESS YOU'LL FIND...

PHOTOGRAPHING FLAME! The schlieren process permits Airco researchers to experiment with nozzle shapes for any desired combustion flow pattern . . . and to analyze the central core of an oxygen cutting stream. For example, measurement of the issuing stream (photo right) helps us develop greater efficiency in Airco cutting equipment. Part of Airco's continuing research and development program — this test indicates the unseen "performance insurance" you buy with every Air Reduction product and process!

AIRCO®

OXYGEN • ACETYLENE • INDUSTRIAL AND RARE GASES • CALCIUM CARBIDE • WELDING SUPPLIES AND ACCESSORIES

YOKES FOR AN IRON HORSE...



THE AIRCO NO. 50 TRAVOGRAPH mass produces yoke-shaped equalizer bars for locomotives . . . to a 1/16″ tolerance! Torches are automatically guided by an electronic tracer following a low-cost, pen-and ink drawing . . . as four bars are cut simultaneously from 1½″ mild steel, hot rolled plate. The versatile Travograph may be used for straight cutting, beveling or squaring . . . for circles up to 12 feet in diameter . . . or for straight lines of any desired length by adding extra sections of rail. Intricate shapes . . . cut to specification . . . with precision!

And remember, when you need oxygen, acetylene, other industrial or rare gases, think of Air Reduction. A nation-wide distribution system is ready to supply your needs.

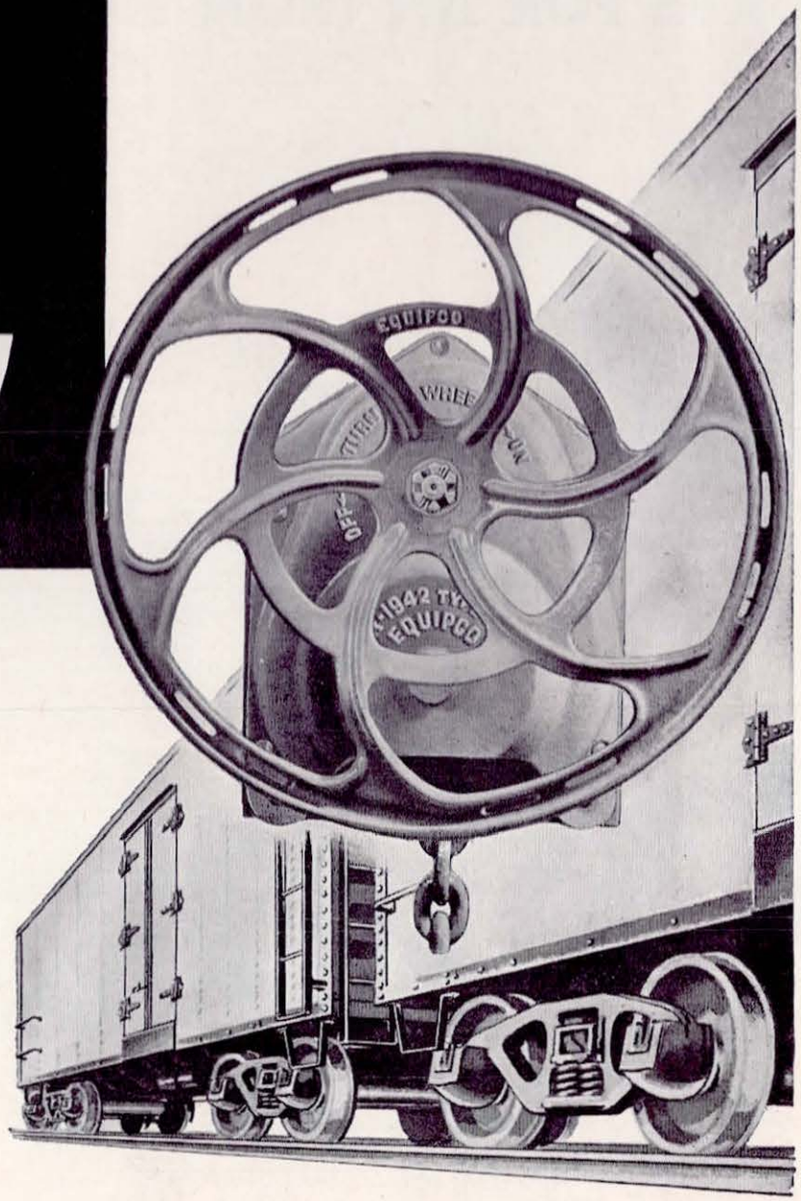
AIR REDUCTION

DEALERS AND OFFICES IN MANY PRINCIPAL CITIES

60 East 42nd Street • New York 17, N. Y.
Air Reduction Sales Co. • Air Reduction Magnolia Co. • Air Reduction Pacific Co.
Represented Internationally by Airco Company International
Divisions of Air Reduction Company, Incorporated

• OXYACETYLENE WELDING AND CUTTING APPARATUS • ARC WELDING AND INERT-GAS ARC WELDING EQUIPMENT

NO CAR CREEP!



Equipco

Non-Spin Wheel HAND BRAKE

A.A.R. Certified

When you anchor a car with an Equipco Non-Spin Wheel Hand Brake, that car *remains* firmly anchored, for Equipco Brakes won't loosen-up under car impacts or ground vibration. There's no creeping—no rolling—no hazard to safety of trainmen, equipment, or lading. The Equipco is the *holdtight* brake that stays set until purposely released. *Write for descriptive literature.*

UNARCO

UNION ASBESTOS & RUBBER COMPANY

Equipco Hand Brake Department

332 SOUTH MICHIGAN AVENUE • CHICAGO 4, ILLINOIS

Improved Dreadnaught Ends:

The rounded corner box section in co-operation with the strongest possible corrugated construction—an approved and accepted design.

Diagonal Panel Roof:

The scientifically proportioned material for increased strength is recognized as a better design for box, refrigerator, covered hopper and all house car roofs.

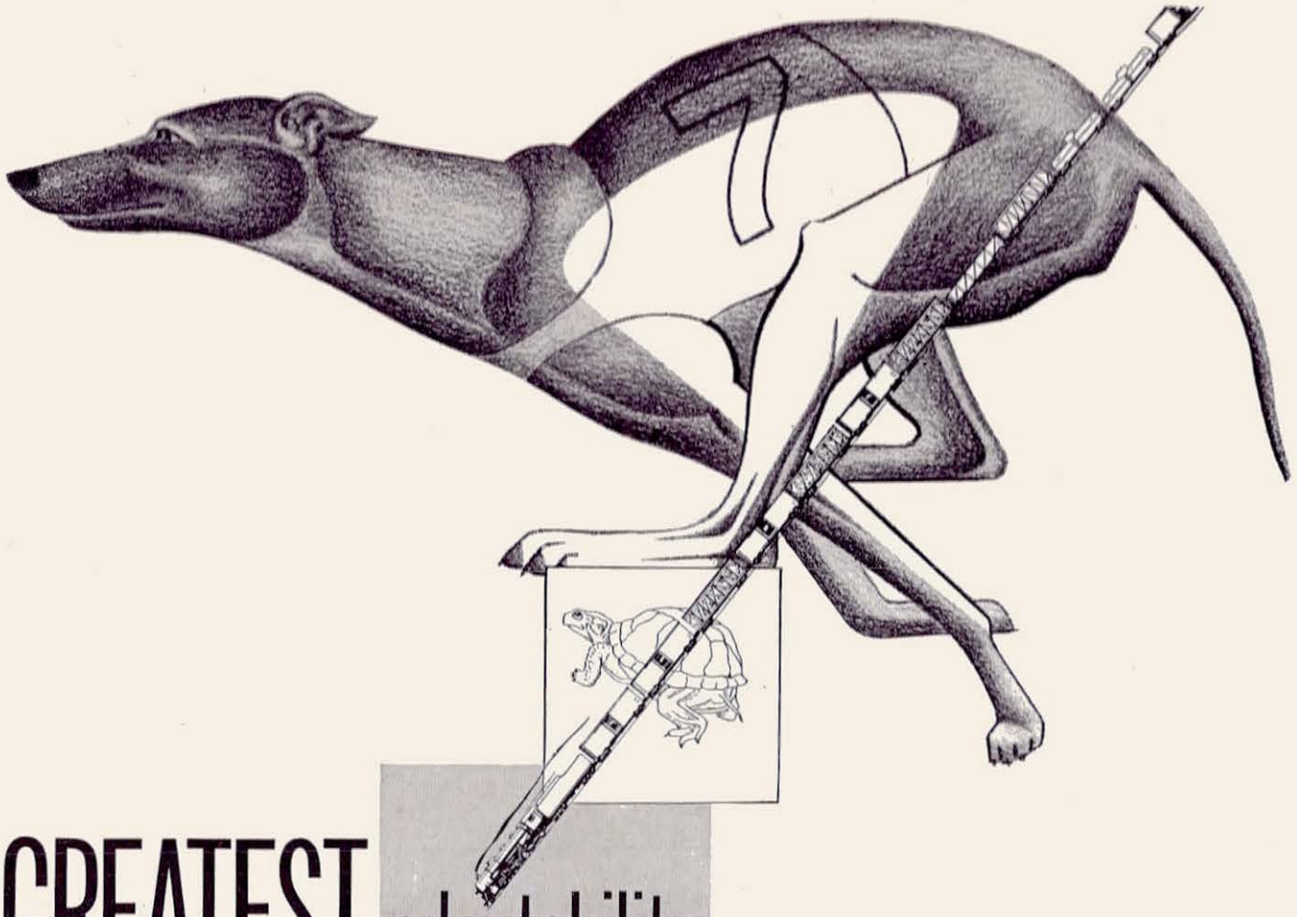
Metal Floor Protector:

This perforated steel floor covering is used in more cars than any other metal or metal reinforced floor. It is easily applied over the wood decking through the door-way—or to any desired coverage—and more than doubles the floor strength.

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 SOUTH MICHIGAN AVENUE, CHICAGO 4 • 247 PARK AVENUE, NEW YORK
HOBART BUILDING, SAN FRANCISCO • FIRST NATIONAL BANK BUILDING, ST. PAUL



GREATEST adaptability at all speeds

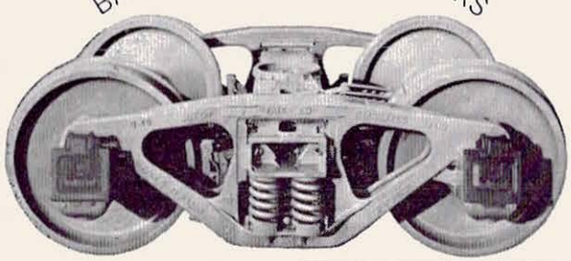
"turtle" or "greyhound"

Whether you're "inching" along like a turtle or "streaking" away like a greyhound, Barber Stabilized Trucks give heavy or light lading the smoothest possible ride.

If the load is light, a first-stage period of soft damping gives a "soft" ride ... for heavier loads, up to the allowable 10% overload, a heavier damping action gives exceptional protection against "over-solid" blows.

These are some of the reasons why over 300,000 Car Sets of Barber Trucks have been specified.

BARBER STABILIZED TRUCKS

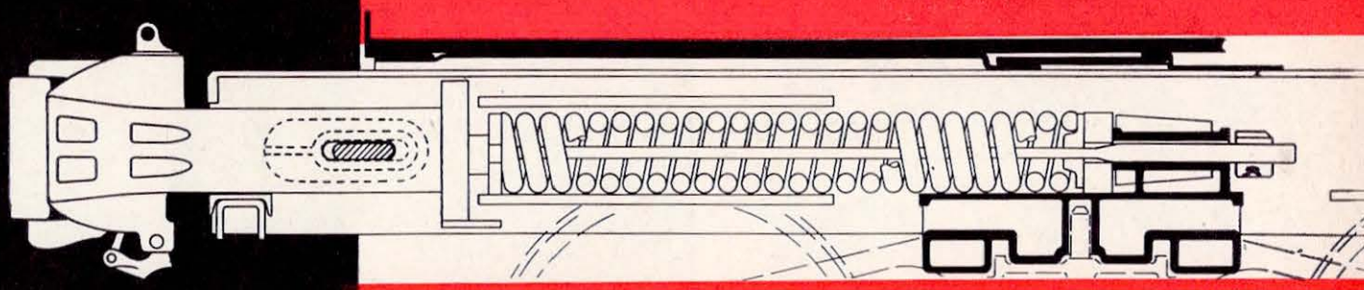


The side springs increase the capacity of the Barber Truck, since they carry their share of the load.

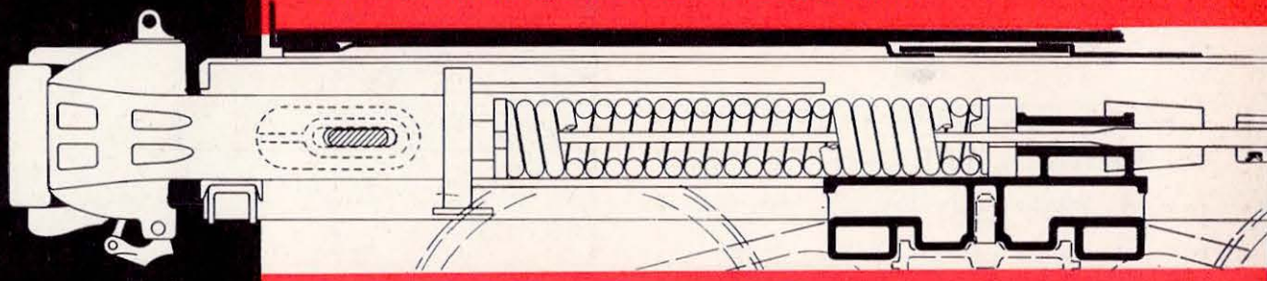
6171

STANDARD CAR TRUCK COMPANY
332 SOUTH MICHIGAN AVE., CHICAGO, ILL.

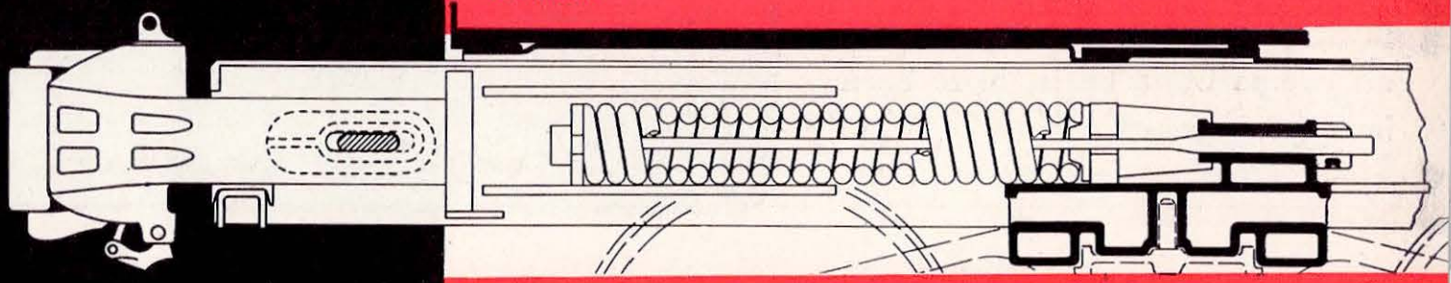
THE CUSHIONING EQUIPMENT THAT PROVIDES LADING PROTECTION



(A) Duryea floating center sill in neutral position.



(B) Under compression, coupler moves ¾ inch in relation to sill and sill moves 7 inches against resistance of coil springs at either end of sill and friction of car floor.



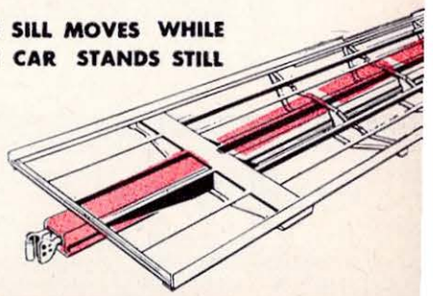
(C) Under pull or impact from opposite end sill moves 7 inches as shown. Total movement—14 inches plus coupler movement.

FOR MAXIMUM LADING AND CAR PROTECTION EQUIP ALL NEW CARS WITH THE NEW HIGH-CAPACITY Duryea

CUSHION

Underframe

THE SILL MOVES WHILE THE CAR STANDS STILL

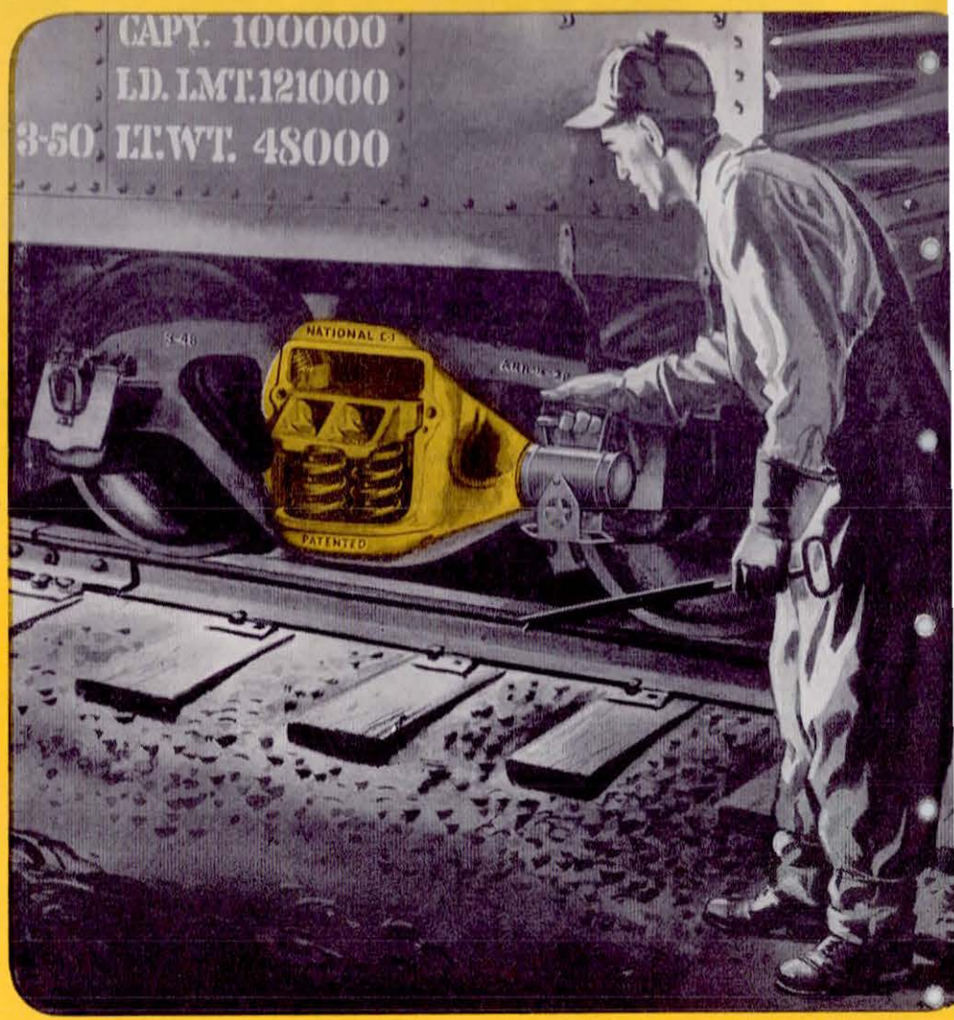


HULSON CO. 332 SOUTH MICHIGAN AVENUE CHICAGO 4, ILLINOIS

A "PAY-LOAD" at End of the Run!

with

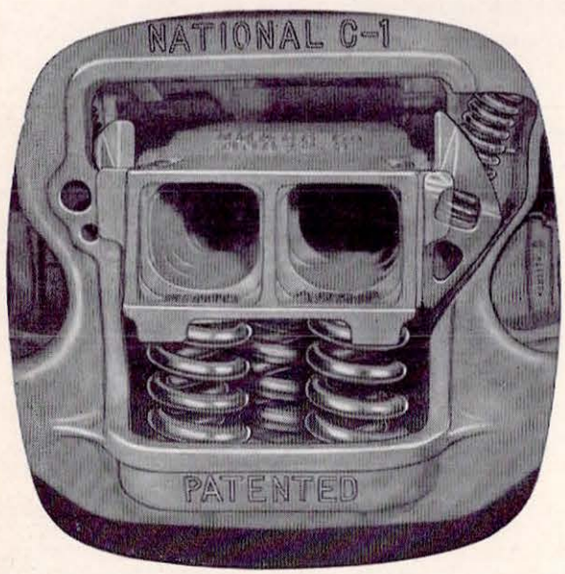
NO DAMAGE TO LADING or CAR



THE RAILROADS WANTED TO KNOW—

Official road service "ride tests" were conducted by AAR over three year period, 1948-1950. DATA, supported by statements of the official AAR observers, is a matter of record.

The high standing and points of merit relating to National C-1 Truck, on comparative basis, have been broadly recognized.



NATIONAL

ALL PURPOSE C-1 FREIGHT TRUCK

for IMPROVED OPERATION

Results are what really count!

NATIONAL'S SERVICE TO THE RAILROADS INVOLVES DEVICES WHICH EFFECTIVELY REDUCE DAMAGE TO LADING and CAR REPAIRS

Mechanical development and test programs have guided the course for our technical advancement over many years. Continued work is scheduled at our PRODUCT ENGINEERING CENTER, Cleveland. These new centralized facilities are already creating marked interest for the benefit of railroads and car builders.

THE RAILROADS HAVE SHOWN THE NEED for *Continued Freight Car Truck Improvement!*

THE NATIONAL C-1 DESIGN

with proven service has been widely accepted for its several unique and practical features

ECONOMY—resulting from performance and reduced maintenance

QUICK WHEEL CHANGE—wheels do wear out!

EASY TO APPLY AND DISASSEMBLE—by car builders, or in road shops, and on rip tracks

EFFECTIVENESS OF FRICTION CONTROL MECHANISM—

- Simple in design
- Provides for maximum control and truck alignment
- Large wedge bearing areas—against hardened steel plates
- Low-stressed wedge springs
- Cast steel wedges—long life due to ample size, rugged design and quality

VISUAL INSPECTION—friction springs and wedges can be plainly seen

BOLSTER END DESIGN—full box section; friction wedges in truck columns

REDUCED NUMBER OF PARTS—only seven castings per truck plus springs and lids

JOURNAL WEDGE ALIGNING LUGS—cast integrally in top of box for protection of journal bearing lugs. A further adjunct for truck alignment

LOAD SPRING RETENTION—integral cast bosses and design of spring well prevents springs out of position or lost

BREAK BEAM SAFETY LEDGES—distinctive provision for beam support

A-6680

All these and more too FOR THAT BETTER RIDING TRUCK!

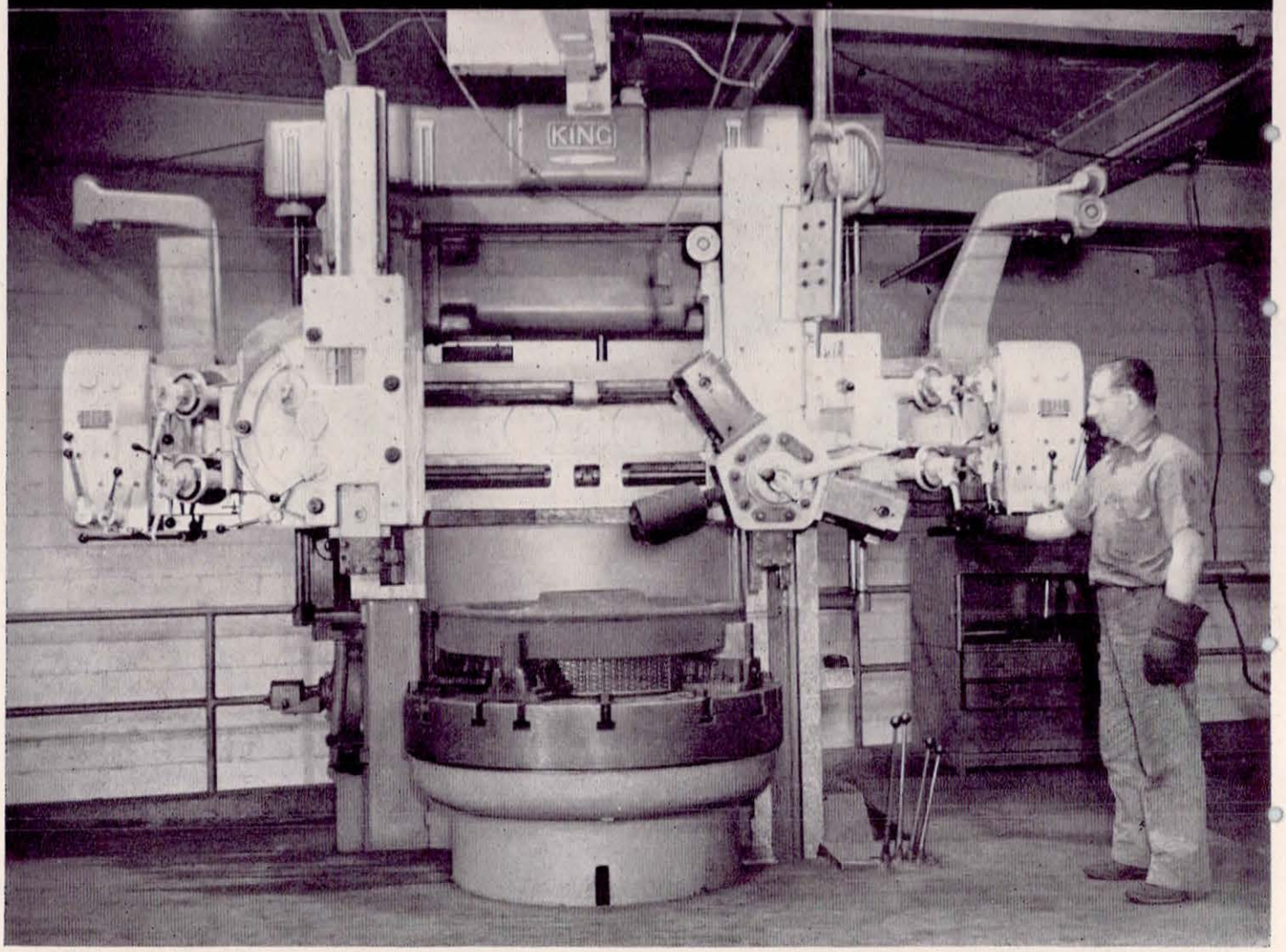
85 YEARS OF SERVICE TO TRANSPORTATION

Ask for NATIONAL CIRCULAR 5150

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY
Cleveland 6, Ohio
COUPLERS • FREIGHT TRUCKS • YOKES • FRICTION AND RUBBER DRAFT GEARS • JOURNAL BOXES AND LIDS

NATIONAL Products FOR TRANSPORTATION AND INDUSTRY Est. 1868

AGAIN..KING HELPS AMERICA'S RAILROADS



Selected for Multi-Million Dollar Diesel Shop

The 52" KING mill shown here is used for boring, facing, and turning operations on diesel locomotive wheels—in one of the most modern diesel maintenance shops in America. This multi-million dollar plant, a model of efficiency, was recently erected and equipped by a prominent railroad located in the eastern part of the United States. *Everything* in this plant had to be the *finest*. In boring mills, management made the one logical choice — KING . . . The machine pictured is a modification of our standard 52" design. It is equipped with left-hand ram and right-hand turret head. A special indicator and bracket permits accurate centering of the turret for rough and finish boring. Operations performed include trueing outside diameter, facing off hub, turning hub for dust guard, rough and finish boring, cutting the chamfer, and forming the radius.

King VERTICAL BORING & TURNING MACHINES

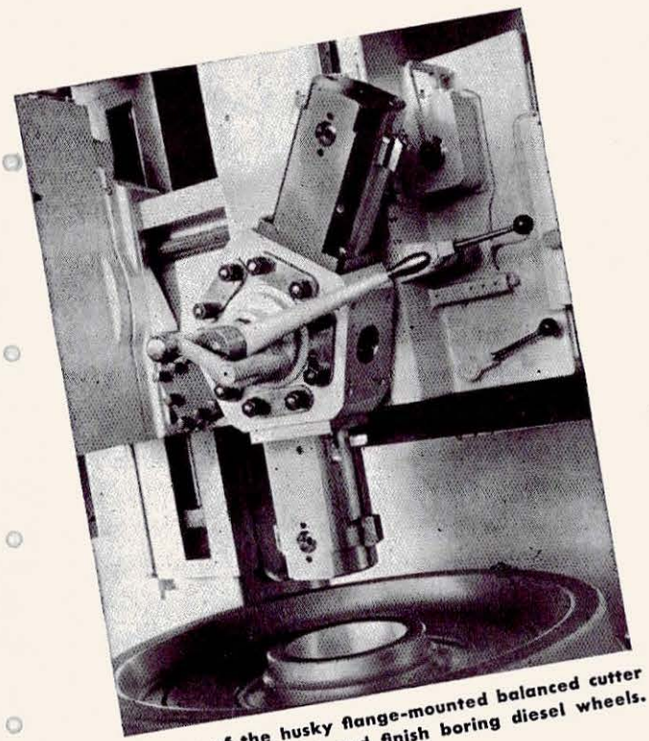
KEEP DEFENSE PRODUCTION "ROLLING"!

Faster, More Accurate Machining of Repair Parts Assures *Maximum Locomotive Availability*

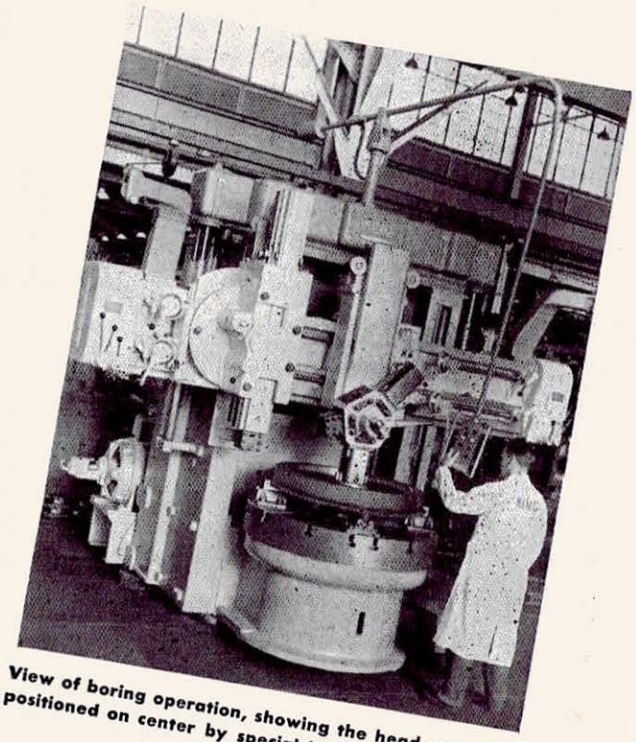
Once again, as in World War II, America looks to its railroads to bear the main burden of an ever-increasing traffic load of defense products. And again, KING is being called upon to supply many of the boring mills required for maintenance of motive power.

KING machines, in a wide range of types and sizes, are ideally suited for this vital maintenance work. Depending upon the customer's particular needs, the demand is being met in some cases by modifications of standard KING mills—as in the 52″ machine illustrated—and in other instances by the more versatile general-purpose mill.

KING Vertical Boring & Turning Machines are made in ten sizes—30″, 36″, 42″, 52″, 62″, 72″, 84″, 100″, 120″, and 144″—the widest size range among vertical mills.



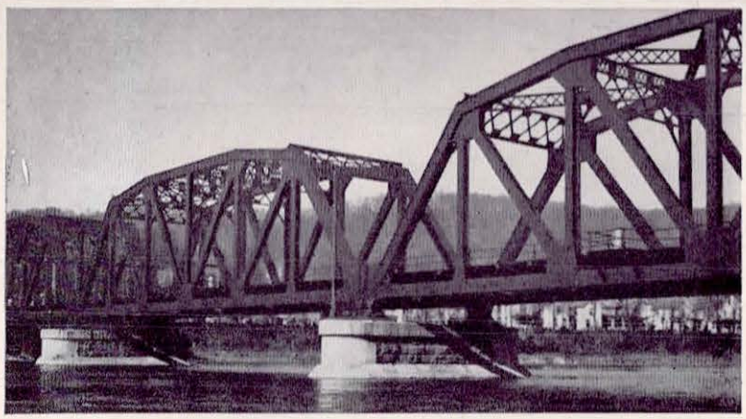
Close-up of the husky flange-mounted balanced cutter bars used for rough and finish boring diesel wheels.



View of boring operation, showing the head accurately positioned on center by special indicator and bracket.

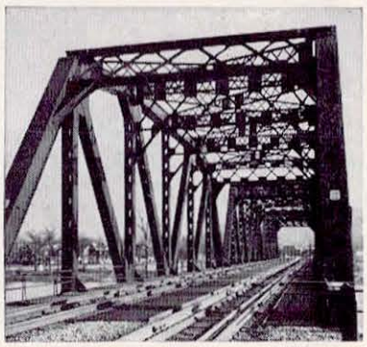
AMERICAN STEEL FOUNDRIES **KING MACHINE TOOL DIVISION** CINCINNATI 29, OHIO

A brand new bridge in 7½ hours!



LARGE PHOTOGRAPH at top shows the new bridge on falsework alongside the old bridge. Falsework for the old bridge can be seen on the opposite side of the piers. Directly above is view of new bridge after removal of old bridge and all falsework.

NEW BRIDGE is in position on piers. Old bridge is on falsework.



CLEAR TRACK AHEAD! Job completed, the bridge is open for traffic.

The structure was designed by the Pennsylvania Railroad Company. Fabrication, erection and removal of the old span was by American Bridge.

AVAILABLE NOW! For showing in churches, schools, clubs and industries, the new sound and color motion picture—BUILDING FOR THE NATIONS—a candid, factual photographic record in full color of the highlights of the fabrication and erection of the United Nations' Secretariat Building in New York City.

How novel use of the "double shift" speeded erection of Pennsy's new triple-span bridge over the Allegheny River

PENNSYLVANIA RAILROAD'S new double track bridge over the Allegheny River at Warren, Pa., is another example of American Bridge ingenuity. In this case, an old bridge was replaced by a modern structure on the existing piers with a minimum of traffic interruption.

The project involved the erection of three double-track, thru truss spans, each 154′6″ long and 33′ c.c. of trusses, on falsework adjacent to the existing piers, simultaneously rolling the old structure off these piers onto similar falsework, and the 2,200-ton steel superstructure with its ties, rails, timbers and pipe railing into position on the original piers.

The amazing "double shift" transposition was completed—all six spans simultaneously—rails connected, and the new bridge opened for trains after a traffic interruption of only 7½ hours!

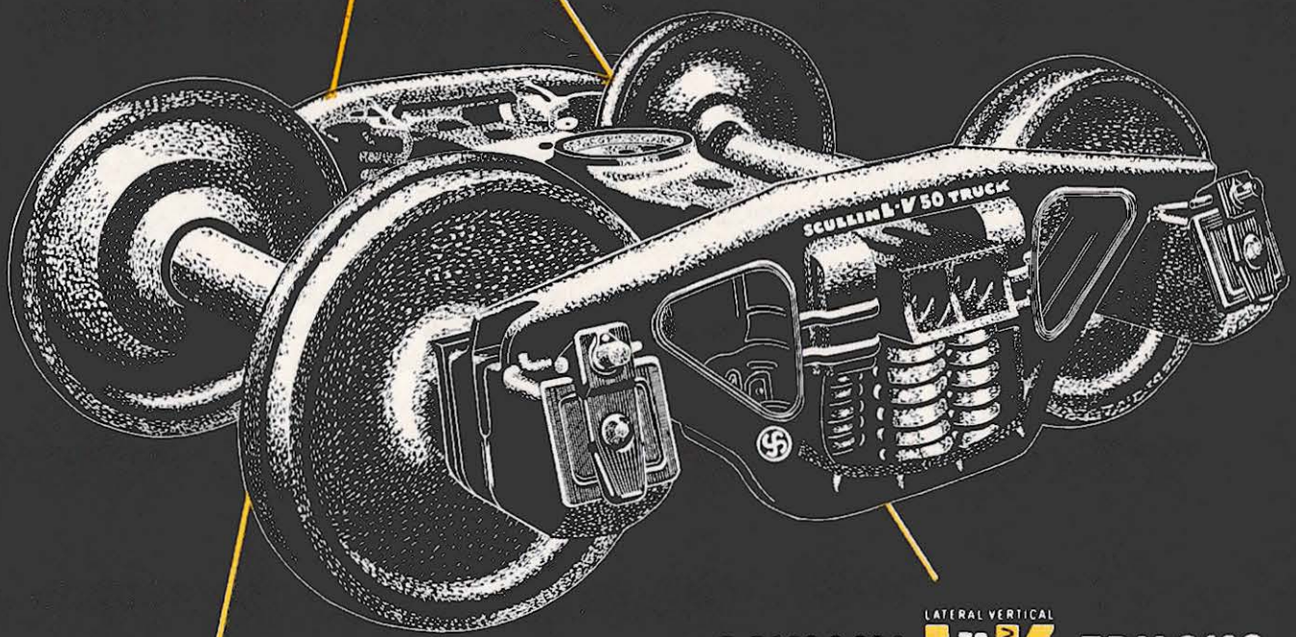
Jobs like this, and the more recent one for the Illinois Central at Cairo, explain why so many railroads rely upon the know-how, the facilities, and the experience of American Bridge to handle the most difficult construction problems.

AMERICAN BRIDGE DIVISION, UNITED STATES STEEL CORPORATION
GENERAL OFFICES: 525 WILLIAM PENN PLACE, PITTSBURGH, PA.
Contracting Offices in: AMBRIDGE · ATLANTA · BALTIMORE · BIRMINGHAM · BOSTON · CHICAGO
CINCINNATI · CLEVELAND · DALLAS · DENVER · DETROIT · DULUTH · ELMIRA · GARY · MEMPHIS
MINNEAPOLIS · NEW YORK · PHILADELPHIA · PITTSBURGH · PORTLAND, ORE. · ROANOKE
ST. LOUIS · SAN FRANCISCO · TRENTON UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS TRADE MARK

AMERICAN BRIDGE

UNITED STATES STEEL



LATERAL VERTICAL
SCULLIN L 50 V TRUCKS
CUSHIONED MOTION

THE SMOOTHEST TRAFFIC-BUILDERS
BETWEEN LCL AND YOUR RAILS

STEEL CASTINGS MANUFACTURER

NEW YORK
CHICAGO
BALTIMORE
RICHMOND, VA.

Photo courtesy Canadian Pacific Railway . . .

SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

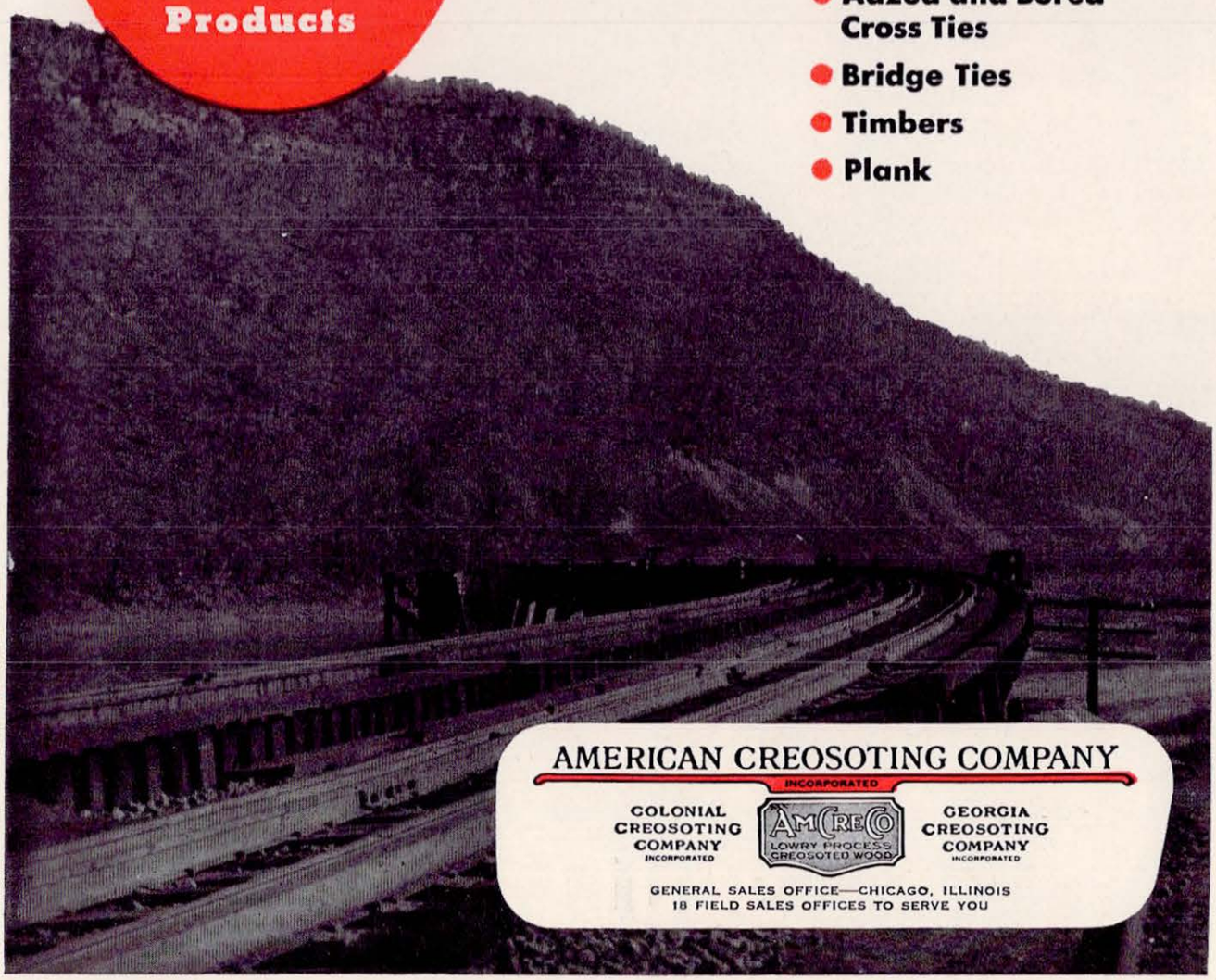
AMCRECO
PRESSURE TREATMENT means Longer Service Life Reduced Maintenance Costs

In Amcreco cross ties, bridge timbers and piles, Lowry Process Pressure Treatment makes the big difference. The natural strength of the wood is preserved to assure long dependable service.

That's why Amcreco Products stand up for extra years under the ever increasing pounding of high speed rail traffic — have increased resistance to the effects of climate, insects and fungi. For lower overall costs and reduced maintenance, it will pay you to specify Amcreco next time.

Amcreco
Lowry Process
Creosoted Products

- **Adzed and Bored Cross Ties**
- **Bridge Ties**
- **Timbers**
- **Plank**



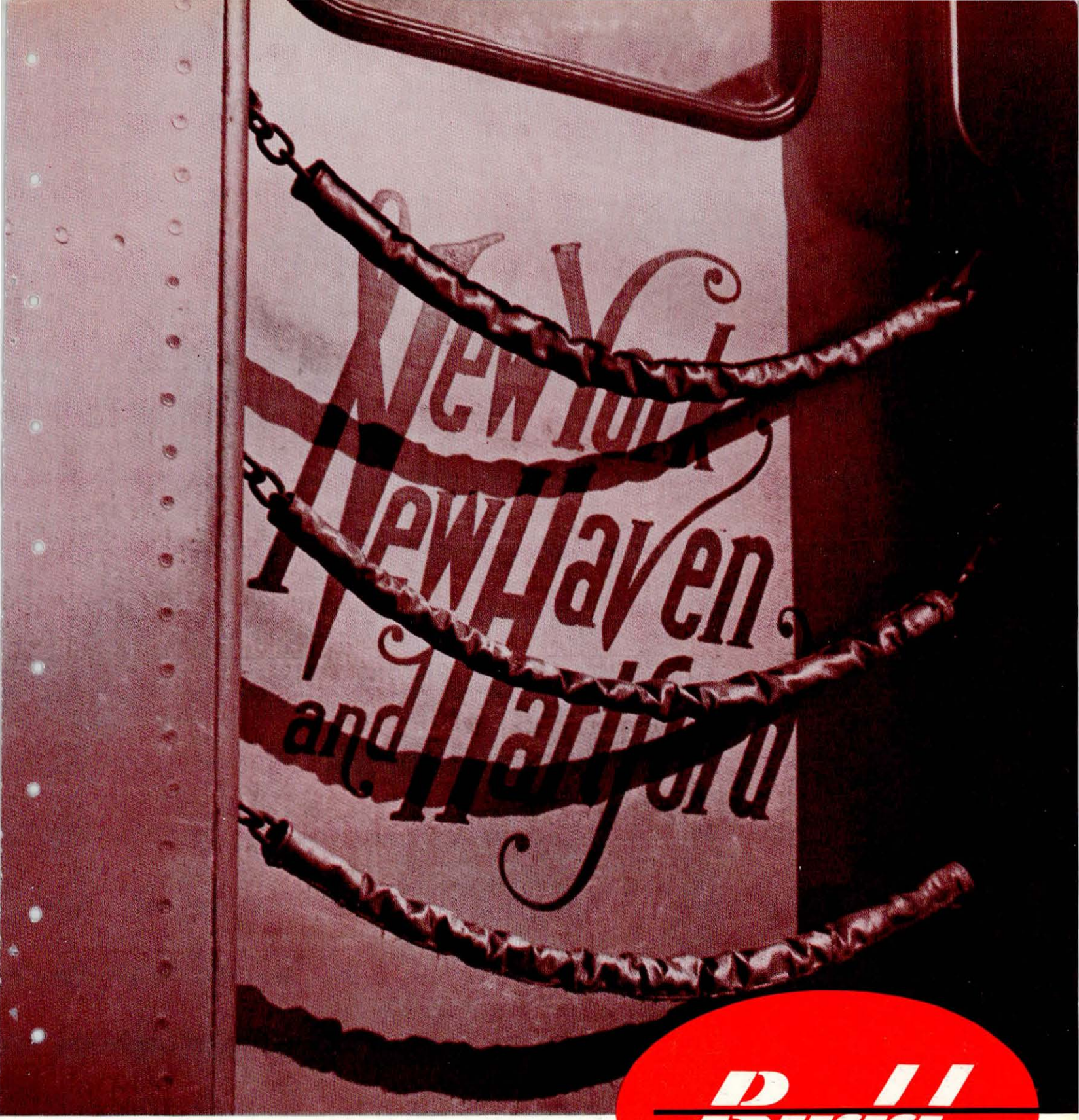
AMERICAN CREOSOTING COMPANY
INCORPORATED

COLONIAL CREOSOTING COMPANY INCORPORATED

AMCRECO LOWRY PROCESS CREOSOTED WOOD

GEORGIA CREOSOTING COMPANY INCORPORATED

GENERAL SALES OFFICE—CHICAGO, ILLINOIS
18 FIELD SALES OFFICES TO SERVE YOU



Budd

"We . . . wish to express

our thanks and appreciation"

"WE...

wish to express

our thanks and appreciation"

Most letters from passengers to railroads contain brickbats. But not this one addressed to the New Haven and signed by 31 passengers in South Hanson, Mass.

"It would be a shame," they said, "to let the railroad make such improvements in our town without some sort of recognition on our part. Enclosed is a 'piece of paper' that some of us circulated at the South Hanson Depot last month."

There were two reasons for this expression of appreciation—a new station, and the inauguration of service with Budd-built RDC's.

"When will we get delivery of more RDC's?" asked a New Haven official. "The situation in Worcester is getting desperate. Every day we get complaints from our conductors about overcrowding. The other day an RDC pulled out of Worcester for New London with 107 passengers aboard, with stops ahead to pick up more."

That particular RDC has seats for 89 passengers. It is operating on a run that had not known passenger service for twenty-five years.

To The Public Relations Dept. October - 1952

New Haven Railroad

South Station

Boston, Massachusetts

Gentlemen:

WE THE UNDERSIGNED - REGULAR PASSENGERS OUT OF SOUTH HANSON, WISH TO EXPRESS OUR THANKS AND APPRECIATION FOR THE IMPROVEMENTS THAT HAVE RECENTLY BEEN MADE IN AND AROUND THE SOUTH HANSON DEPOT, AS WELL AS FOR THE ADDITIONAL TRAIN SERVICE ADDED TO THIS AREA.

Signed -

Lillie Mason
S R MacLeod
A. F. Gardner
C B Gerrish
Mr. and Mrs. H. P. Ellis
Richard M. Freeman
Grace V. Hammond
Marie Keefe
Albert H. Pilsbury
Blanche Wilcox
Lorraine Finn
Mary C. Sheehan
E Hoosmer
Robert Bryant
Edward H. Walsh
Roy W Puddington

A L Sutton
R. Witte
Louis Colombo
Richard G Letton
William H. Freeman
Norton R. Grant
G. M. Freeman
Manuel Santos
L. Mc Closkey
Mrs. Sarah Ginsburg
Jolene Snow
Harold H Bryant
Pauline Bennett
Mildred River Donald
M Henderson

Howard N. Fowler, Managing Editor
The Mansfield News.

THE MANSFIELD NEWS
AND THE FOXBORO TIMES

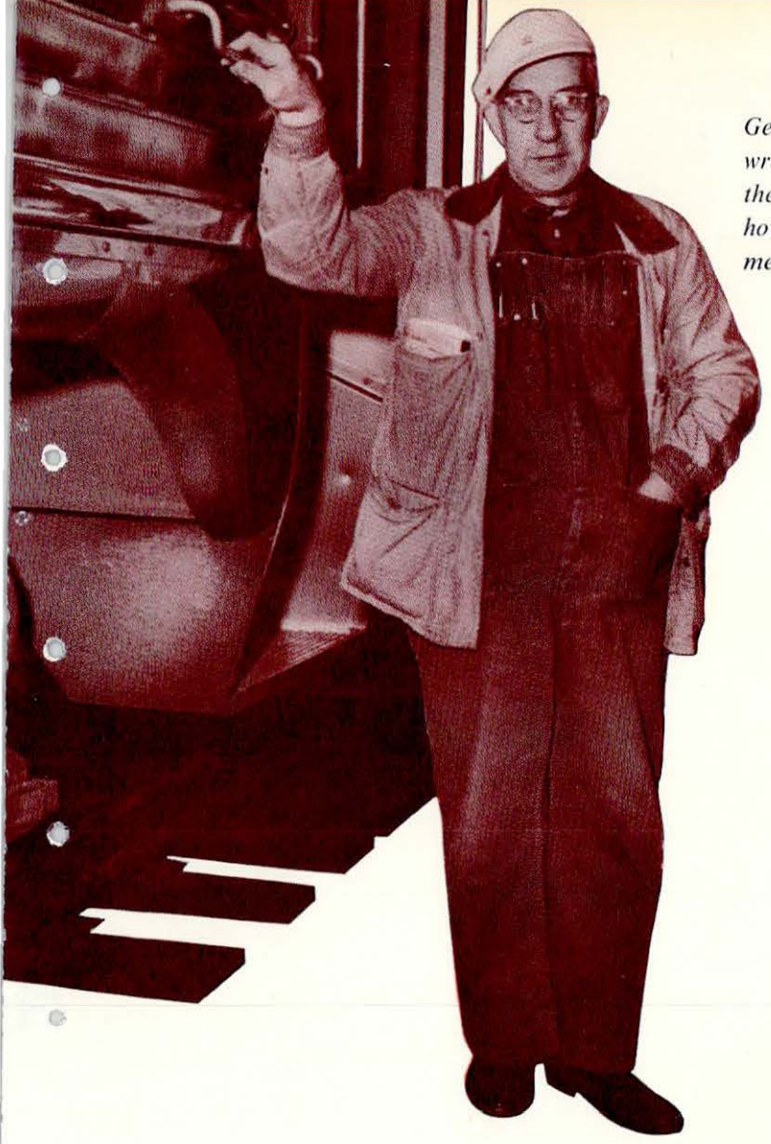
An editorial in the Mansfield (Mass.) News read:

"Just as sure as we eat three squares a day, urban commuter traffic is certain to increase as more folks flock into our southern Massachusetts communities, and the New Haven Railroad pushes its present bid for more short-haul passenger traffic with the new, plush Budd cars.

"It's attractive jet-age service for grass roots towns, which ought to ring the cash register just about as fast as schedules can be stepped up."

Incidentally, the New Haven inaugurated fifty new schedules on September 28th.

G. E. Slattery, Station Master at South Station, Boston. "RDC has changed passenger complaints to compliments. It certainly is nice to have people like the service you're selling."



Geo. W. Prance, New Haven engineer, wrote an extremely interesting article for the Locomotive Engineers Journal, telling how RDC creates more jobs for railroad men.

A recent article published in the Locomotive Engineers Journal, the publication of the Brotherhood of Locomotive Engineers, written by a member, New Haven engineer Mr. George W. Prance, opens with this paragraph:

"Commuters are ridin' the rails again! This cheering fact is more and more in evidence on my line, the New Haven Railroad. A gain of 1,372,000 new passengers has been recorded during the past six months. All this has resulted in new jobs for many of us and brought welcome revenue to the Company tills."

In an address to the American Association of Passenger Traffic Officers, in October, at San Antonio, Mr. C. E. Williams, the New Haven's General Passenger Traffic Manager said: "We estimate that out-of-pocket train costs are reduced one-half when an RDC car or train replaces a conventional locomotive propelled train.

James E. Fitzgerald—Master Mechanic, South Station, Boston. He has been with the New Haven more than thirty-five years and says RDC is the best short-haul train in America today. Not one of his RDC's has had a major breakdown.

40

"With one lone exception, passenger earnings on the New Haven contribute a larger share of gross operating revenue than any other major carrier in the United States. During 1950, The New Haven's passengers contributed about 40 per cent of the system's gross revenue.

"Passenger service with us is not a by-product, but a very important part of our livelihood. In fact, passenger service must make its contribution to the system's earnings to keep our Company solvent."

All the foregoing reactions and results were obtained when the New Haven had only nine Budd RDC's. Before 1953 is ended, they will have forty.

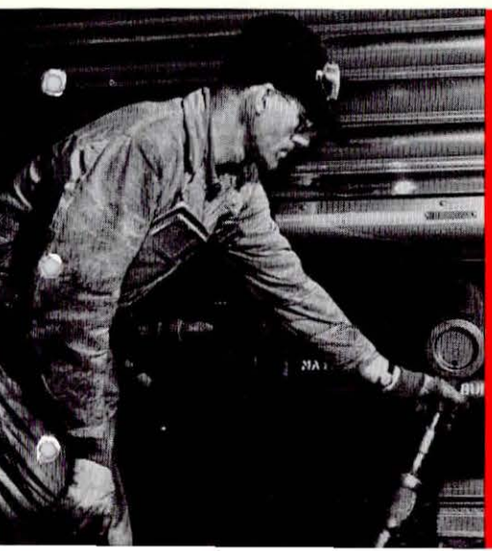
Get out a New Haven system map and go over it with a New Haven official to find out what they're going to do with these additional RDC's, and you have a situation comparable to a youngster at a three ring circus trying to point to everything that's going on at one time.

RDC's going to take over the entire inter-city service between Boston and Providence? Probably.

"And we're going to increase our RDC middle-of-the-day commuter runs for women shoppers on all the lines running into Boston, they've proved so popular. We've got the rails, we have the overhead, so why not run the RDC's and make money?"

Here's what they plan to do. They'll run a three-car RDC train out of New London to Boston in the morning, then put the cars, as single units, on runs to Dedham, Needham and other branches during the day, assemble them back in South Station in the evening and return them as a six-car train to New London.

The New Haven operates RDC's on tight schedules which sometimes call for a five-minute turn-around. That is when the accessibility of RDC's vital parts pays off to service experts E. L. Studley (left), O. R. Goulet and Joe Ford (center) and Walter W. Wentworth, assistant to Jim Fitzgerald.



Henry S. Mahler, New Haven engineer who is "probably having the most fun of his entire career" with RDC.

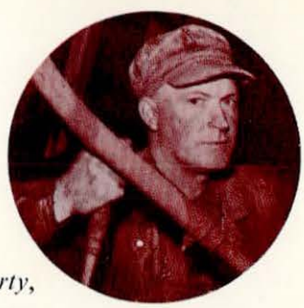
Joseph C. Ford, Assistant General Foreman, praises RDC's ease and simplicity of maintenance.

Service up the Naugatuck Valley—a beehive of industry—from Bridgeport through Waterbury to Winsted has been sort of a mixed up affair composed of conventional trains, buses and RDC's. The New Haven is allocating six RDC's to take over.

Eight more are going to ply between Boston and Hyannis, replacing conventional equipment. Four others will do the same thing between Boston, Hartford and Waterbury. Another takes on the schedule between Providence and Worcester. Southern New Englanders certainly have some wonderful service coming their way.

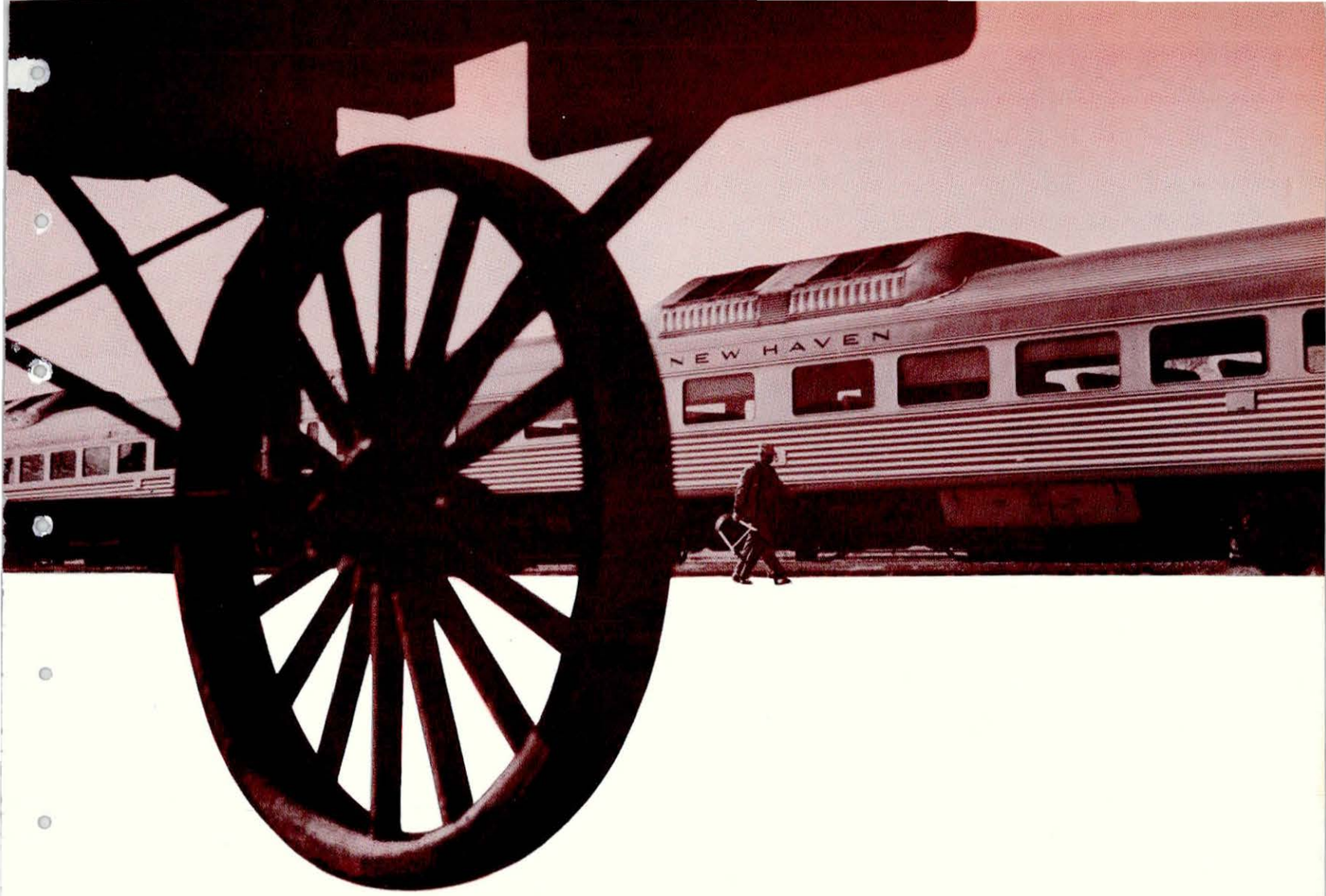
That Worcester-New London dilemma referred to earlier was caused by the reinstatement of passenger service between Worcester and New London after a twenty-five year lapse. It provides direct, fast connections to and from New York. In its first week, before many people knew about the new service, one RDC carried 944 passengers.

In eleven weeks, according to Mr. Williams, it carried 12,443 passengers with revenue to the line of



Martin Hegarty, Maintenance Department. "Even though you don't have to do it often, changing a shoe on RDC disc brakes is a cinch."

Taking on sand. Sand may be applied either automatically or manually to obtain highest performance from RDC's disc brakes.



NEW HAVEN **RDC**

$16,575, and 5,030 passengers delivered to and received from the main line trains at New London with revenue amounting to $19,226. There were 7,413 passengers handled locally. The expenses, excluding depreciation, amounted to $14,310 compared with gross revenue of $35,801.

"We're even considering putting RDC's on the run between New Haven and Poughkeepsie, where we have *never* handled anything but freight."

The reply to a questioning eye-brow was that Yale is in New Haven and Vassar in Poughkeepsie.

What about a deal like the Worcester-New London set-up, from Willimantic, via Middletown, to New Haven, now freight exclusively? They're checking the rails. And of course that Worcester-Providence freight run is on the docket, too.

How about main-line feeder service, as contrasted with branch-line feeders?

Sure. Start an RDC out of Providence, making way stops, and schedule it to reach New London just ahead of a New York Express.

Well—that's not the whole story of the New Haven's imaginative planning for service with RDC's by any means. There's a lot that can't be told yet, like their plan for milking Vermont, New Hampshire and Maine of New York bound passengers who can't be bothered with changing from the North Station to the South Station in Boston, and are either driving or flying.

But you get the general idea—a railroad that has to make money by carrying passengers, passengers who respond enthusiastically to good service, a service that creates more jobs. And Budd RDC's.

The Budd Company, Philadelphia 15.

Sixteen-year-old Billy Crowley of Chatham: "Boy! Wait til I get back and tell the boys I got a ride on an RDC. It's even better than I'd hoped."

NEW HAVEN RDC

THE BUDD COMPANY
PHILADELPHIA 15, PA.

•

RAILWAY EXCHANGE BUILDING
CHICAGO 4, ILLINOIS

•

230 PARK AVENUE
NEW YORK 17, N. Y.

•

111 SUTTER STREET
SAN FRANCISCO 4, CALIFORNIA

Budd

PIONEERS IN BETTER TRANSPORTATION

Passenger Traffic Will Make the Headlines on May 18 . . .

RAILWAY AGE

30 Church Street
New York 7, N. Y.

January 12, 1953

Coming May 18 . . .

1953 Passenger Traffic Number

of Railway Age

Railway passenger traffic development will be the theme of the May 18, 1953, issue of Railway Age . . . the 15th annual Passenger Traffic Number.

Published at the beginning of the summer touring and travel season, this issue will give the railroads the year's outstanding promotion concentrated wholly on railway passenger traffic and railway progress in service and equipment.

Keynote of the issue for the railroads will be (1) articles designed to give the passenger department effective "talking-points" for selling travel-by-rail . . . (2) distribution to interline ticket agents throughout the United States and Canada to provide a specific audience for the railroads' advertising in this issue.

Well over 100 railroads and manufacturers advertised in the 1952 Passenger Traffic Number. Many of the suppliers took this opportunity to display the travel-appealing qualities of their products . . . from complete luxurious passenger cars to modern lighting and other products that help promote travel comfort and satisfaction.

Advertising forms for the May 18 issue close April 27.

Sincerely,

J. S. Crane

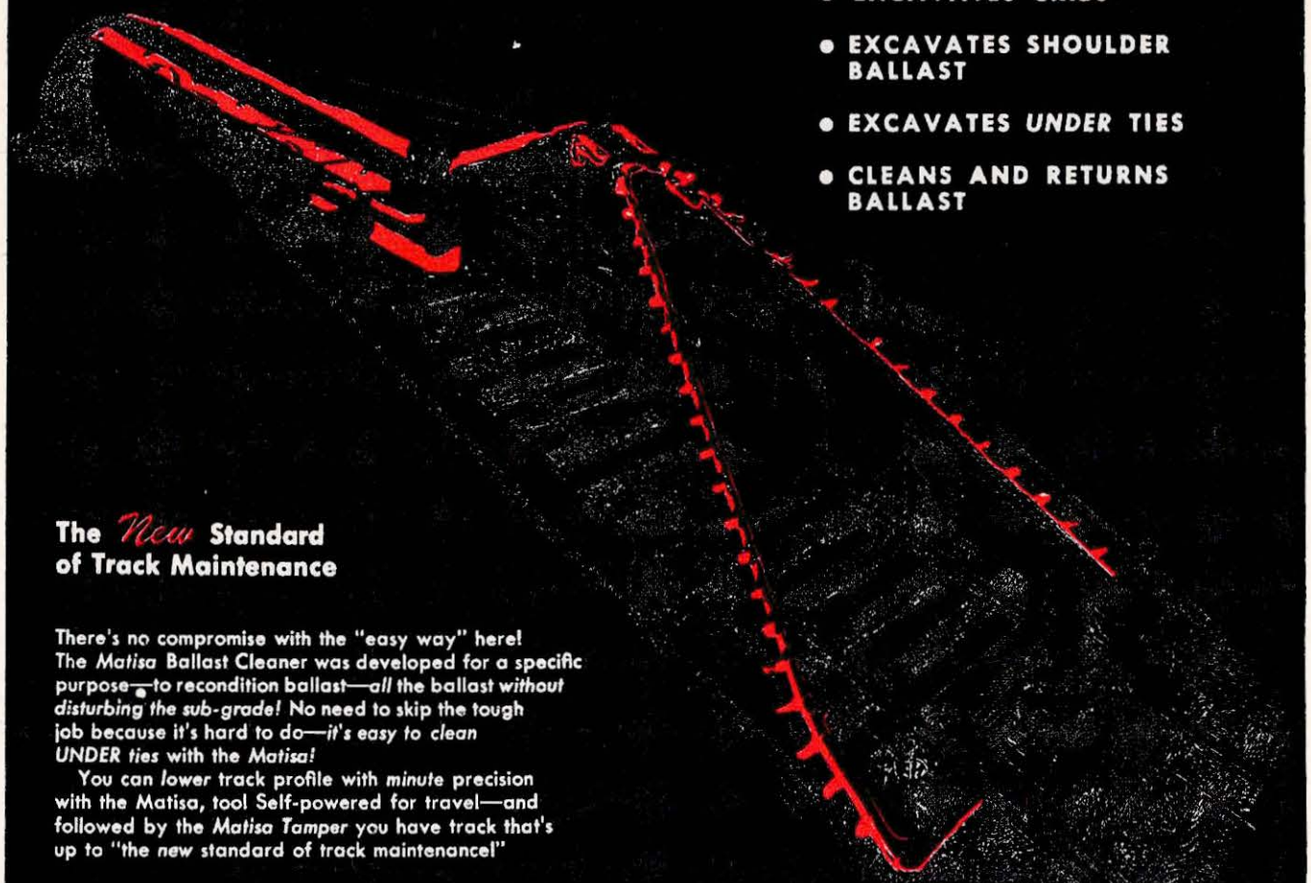
J. S. Crane
Vice President

Be Sure to Be Represented in the 1953 Passenger Traffic Number

ONE Matisa DOES ALL FOUR

in ONE operation!

- EXCAVATES CRIBS
- EXCAVATES SHOULDER BALLAST
- EXCAVATES *UNDER* TIES
- CLEANS AND RETURNS BALLAST



The *New* Standard of Track Maintenance

There's no compromise with the "easy way" here! The *Matisa* Ballast Cleaner was developed for a specific purpose—to recondition ballast—*all* the ballast *without disturbing the sub-grade!* No need to skip the tough job because it's hard to do—*it's easy to clean UNDER ties* with the *Matisa!*

You can *lower* track profile with *minute* precision with the Matisa, tool Self-powered for travel—and followed by the *Matisa Tamper* you have track that's up to "the *new* standard of track maintenance!"

THE MATISA EQUIPMENT CORPORATION
224 South Michigan Blvd. • Chicago 4, Illinois

TRACKWORK SPECIALISTS ALL OVER THE WORLD

Matisa

For your Ph. D. in materials handling...study locomotive crane work at Northern Pacific!

Here's a lesson for *anybody* who has big, heavy or bulky loads to handle . . . whether the load is steel, wood, rock, or loose material. Just study the records and experience of the pace-setting Northern Pacific, and you'll find that no other equipment can match American Locomotive Cranes!

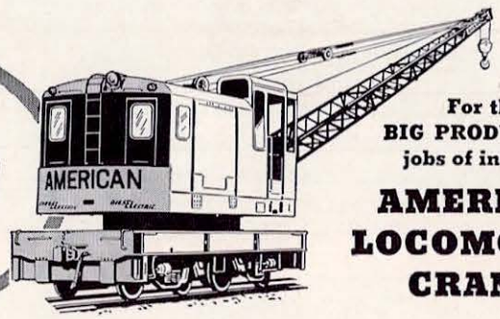
The rugged American diesel crane shown here is now nearly ten years old . . . yet it moves this big load of side-frames as swiftly and smoothly today as the day it was bought. And right now Northern Pacific is awaiting delivery of its newest American . . . this one a big DiesELectric, with diesel power to the deck, electric power to the trucks.

If you, too, have a policy of *continuous modernization*, as Northern Pacific does, you should surely have the latest facts and figures on American Locomotive Cranes. May we show you how these great machines can cut your operating costs and boost your production?

3601

Modernize...economize...with

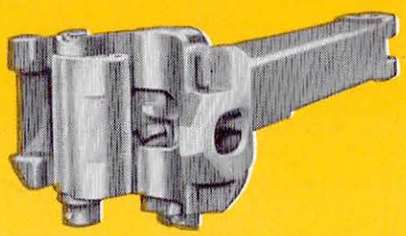
American Hoist
& Derrick Company
ST. PAUL 1, MINNESOTA

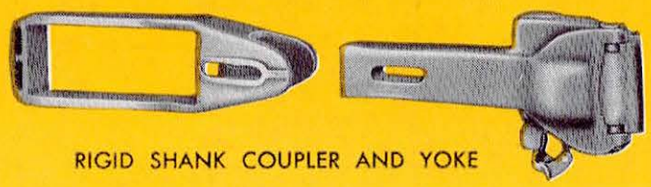


For the BIG PRODUCTION jobs of industry...

AMERICAN LOCOMOTIVE CRANES

BUCKEYE
STEEL CASTINGS FOR RAILWAY EQUIPMENT

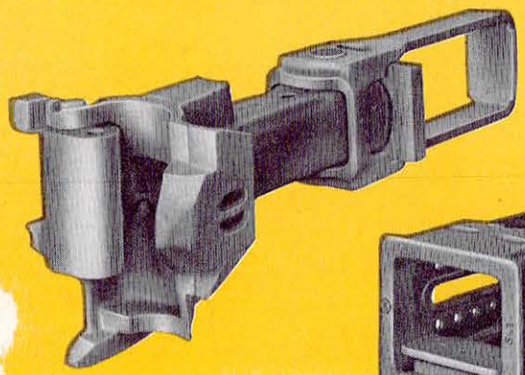


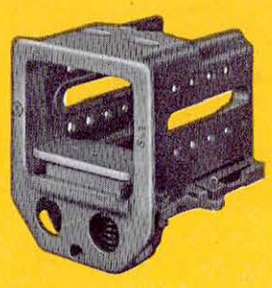


RIGID SHANK COUPLER AND YOKE

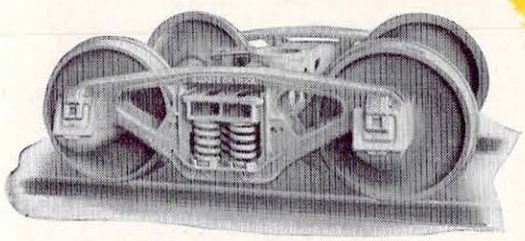
TYPE "H" TIGHTLOCK COUPLER
AND ATTACHMENTS

SWIVEL SHANK COUPLER AND YOKE

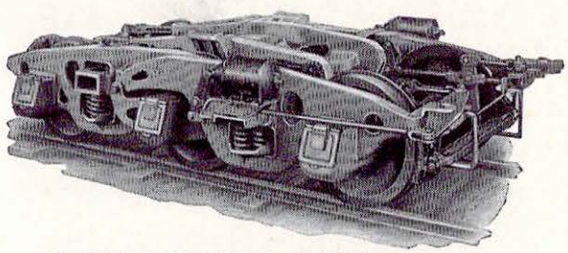




TYPE "F" INTERLOCKING COUPLER
AND ATTACHMENTS

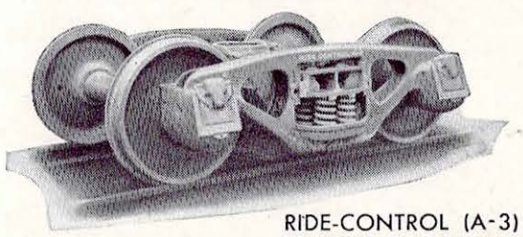


BUCKEYE CUSHION-RIDE
FREIGHT CAR TRUCK

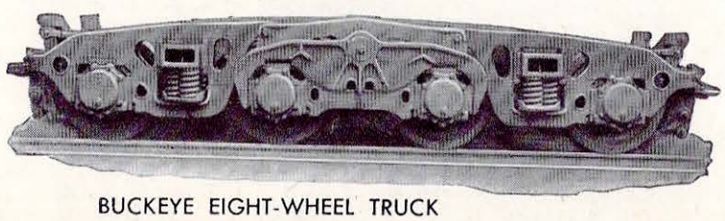


BUCKEYE SIX-WHEEL TRUCK

B



RIDE-CONTROL (A-3)
FREIGHT CAR TRUCK

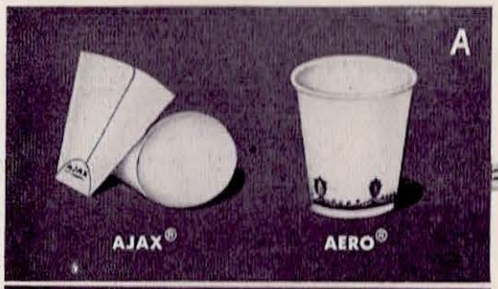


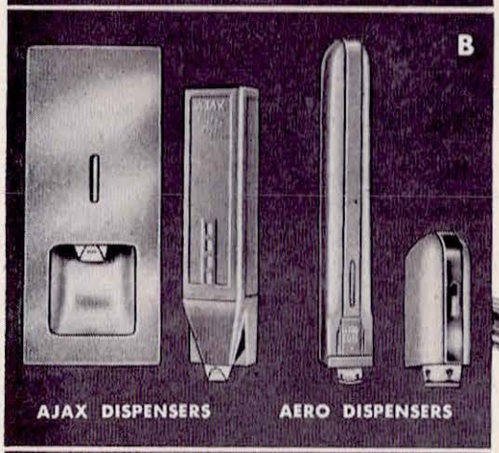
BUCKEYE EIGHT-WHEEL TRUCK

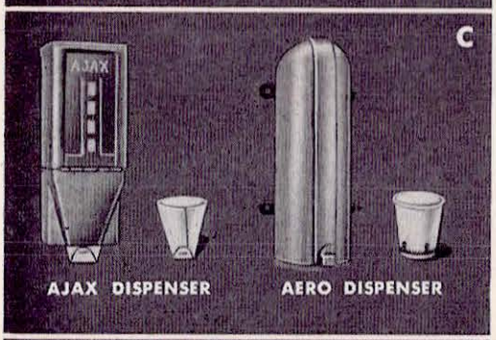
THE BUCKEYE STEEL CASTINGS COMPANY

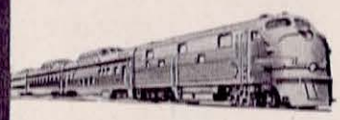
New York, N. Y. Columbus, Ohio Chicago, Ill.

A Complete Paper Water Cup Service for Railroads









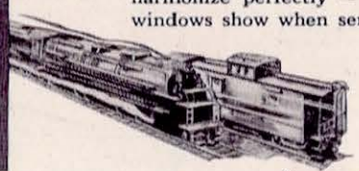
FOR PASSENGER COACHES and SLEEPING CARS

Meet passengers' demands for comfort and strict sanitation with harmonizing, easily accessible dispensers, crisp and clean Ajax or Aero paper cups. And as they drink, *greet them with your message imprinted on the cup* — a service they'll remember.

A **AJAX PAPER CUPS** — Fit the hand perfectly. Have convenient open mouth. Can be held safely and easily even while train is in motion. Wedge shaped with reinforced bottom fold.

AERO PAPER CUPS — Match the luxurious appointments of your De Luxe trains. Round, sturdy cups with rolled drinking edge and flat bottom. Attractively decorated.

B **STEEL DISPENSERS** — Designed especially for modern passenger cars. Recessed and wall type dispensers. Can be firmly secured in place — harmonize perfectly — hinged panels for easy filling — unbreakable windows show when servicing is necessary.



FOR LOCOMOTIVES and CABOOSES

Approved WATER CUP SERVICE
AJAX or AERO Cups with Neat, Steel Dispensers

C In some states railroads are required by law to supply drinking water and dispensers to operating employees. To comply with the law or simply to promote good employee relations, many roads use AJAX and AERO Cups and Dispensers in locomotives and cabooses.

Your employees will enjoy the clean, crisp cups — so easy to hold, so easy to drink from. The dust-proof dispensers of heavy steel can be bolted or welded securely in place. Cups will not fall out yet can be drawn out singly. AJAX Dispensers hold 125 cups — AERO 50 cups.

FOR MAINTENANCE and CONSTRUCTION CREWS

AJAX PORTABLE
Drinking Water Service

D Deliver fresh, cool water to the workers right on the job with the Ajax Mobile Drinking Water Tank. Your work crews will appreciate its sanitary features and you will gain through improved health of employees, less absenteeism, better morale, less lost time on the job.

Here is a tank that's built to last. Made of rugged, aluminum-finished galvanized iron, firmly riveted and braced. Strong carrying straps. Sturdy, guard-protected faucet on bottom. Leak-proof, dust-proof. Easy to keep clean and sterile. Furnished complete with an Ajax Dispenser and Ajax paper cups.

YOUR MESSAGE WILL BE READ OFTEN

E Imprinted on the front of the drinking cups, your friendly greeting will catch the passengers' eyes — and be remembered as a token of friendship and good will. Or use the cups to sell your *safety* messages to the public — to your employees. Several times every day they'll stop for a drink of water. No other method offers such a sure way of getting your messages read — and *read again and again.*

Your message will be imprinted by us on the cups you order for a very nominal charge. Ask for prices and samples.

UNITED STATES ENVELOPE COMPANY
GENERAL OFFICES • SPRINGFIELD 2, MASS.
14 Divisions from Coast to Coast

AMERICAN RAILROADS . . .

OVER 100 YEARS OF PIONEERING AND SERVICE TO AMERICA

Griffin

OVER 75 YEARS OF PIONEERING AND SERVICE TO THE AMERICAN RAILROADS

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

GRIFFIN WHEEL COMPANY

410 N. MICHIGAN AVENUE • CHICAGO 11, ILLINOIS

TACOMA • LOS ANGELES • SALT LAKE CITY • DENVER • ST. PAUL • KANSAS CITY • COUNCIL BLUFFS • CHICAGO • DETROIT • CINCINNATI • BOSTON

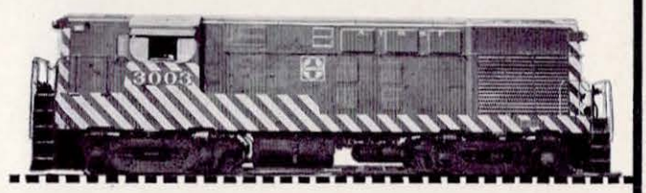
Listen to the RAILROAD HOUR. NBC Network, Monday Nights

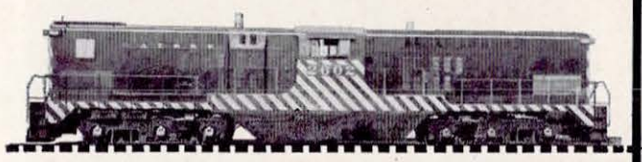
FAR-AIR*

DYNAMIC GRILLES DO DOUBLE DUTY

1. Reduce Dirt and Snow Load

2. Add Beauty to Diesel Equipment





When installed over air intake filters on Diesel locomotives, FAR-AIR Dynamic Grilles effectively deflect snow, dirt and other foreign particles, yet allow unimpeded entrance of air. The higher the air velocity passing the grille face, the greater the effectiveness.

Available in stainless or plain steel, FAR-AIR Dynamic Grilles add to the appearance and service life of any Diesel locomotive. This new Grille can be supplied in practically any size and for a variety of applications.

Farr engineers are always available to discuss special requirements, always glad to assist in solving difficult filtration problems. Write today for information on FAR-AIR Dynamic Grilles and other FAR-AIR railroad equipment.

FAR-AIR FILTERS

"Better by Farr"

*Trade Mark Reg.

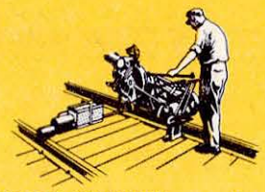
FARR COMPANY

Manufacturing Engineers

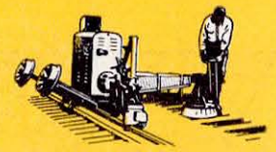
CHICAGO · LOS ANGELES · NEW YORK

Mf'd under license by Control Equipment Co., Ltd., Montreal, Canada

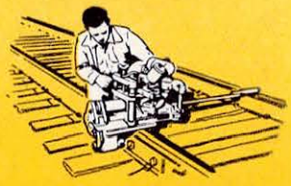
SPIKE PULLER . . . By getting spikes out faster this machine speeds up relaying and reduces the cost of the entire operation.



TRACK WRENCH . . . Provides uniformly controlled tightening on track bolts to prolong rail life and make better riding track.



ADZING MACHINE . . . Provides tie seats in keeping with today's track maintenance standards. All level and in same plane.



RAIL DRILL . . . A compact, lightweight, low-cost easily set drill that proves a money saver.

RAIL GRINDERS . . . With four types of grinders, Nordberg can supply the machine best suited to any type of maintenance grinding.

SPIKE HAMMER . . . All spikes driven straight and at big savings in time and money.

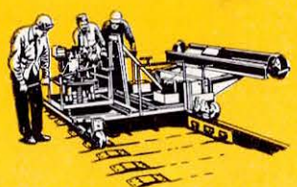
Use these NORDBERG "Mechanical Muscles"* to do a better, faster maintenance job at lower cost!

TRACK SHIFTER . . . Especially suited to heavy lining and high lifts. For new construction, flood repair and grade or line change work.

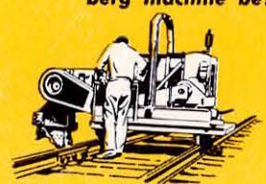
POWER JACK . . . Maintains alignment while speeding up ballasting and general surfacing operations.

LOOKING AHEAD . . . Each year, for the last 6 years, Nordberg has introduced at least one new machine specifically for track work. *What will the next Nordberg machine be?*

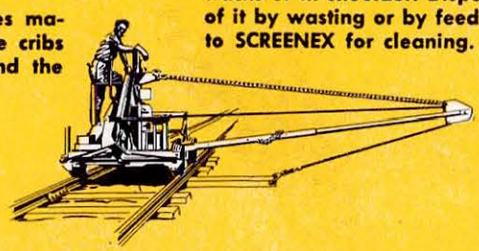
BALLASTEX® . . . Excavates the ballast in area between tracks or in shoulder. Disposes of it by wasting or by feeding to SCREENEX for cleaning.



DUN-RITE GAGING MACHINE . . . Nordberg's newest development — for extremely accurate gaging by correctly positioning the tie plates.



CRIBEX® . . . Removes material contained in the cribs and deposits it beyond the ends of the ties.



GANDY® . . . A triple-purpose machine for pulling ties—inserting ties—and as a material handling crane.

SCREENEX® . . . Takes excavated fouled ballast fed by BALLASTEX, cleans material and returns it to track, intertrack, or shoulder.

DSL YARD CLEANER . . . Cleans more track faster, better, more economically . . . without damaging ties.

For full details on any or all of these Nordberg "Mechanical Muscles"*, write for Bulletins.

*Copyright 1952 Nordberg Mfg. Co.

R1052

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MILWAUKEE, WISCONSIN

NORDBERG MACHINERY

Save time...trouble...money. Order WRRS proved products

1700 ITEMS OBTAINABLE FROM ONE RELIABLE SOURCE!

Railroad-highway crossing signals and safety devices • Signaling and communications apparatus • Movable bridge accessories

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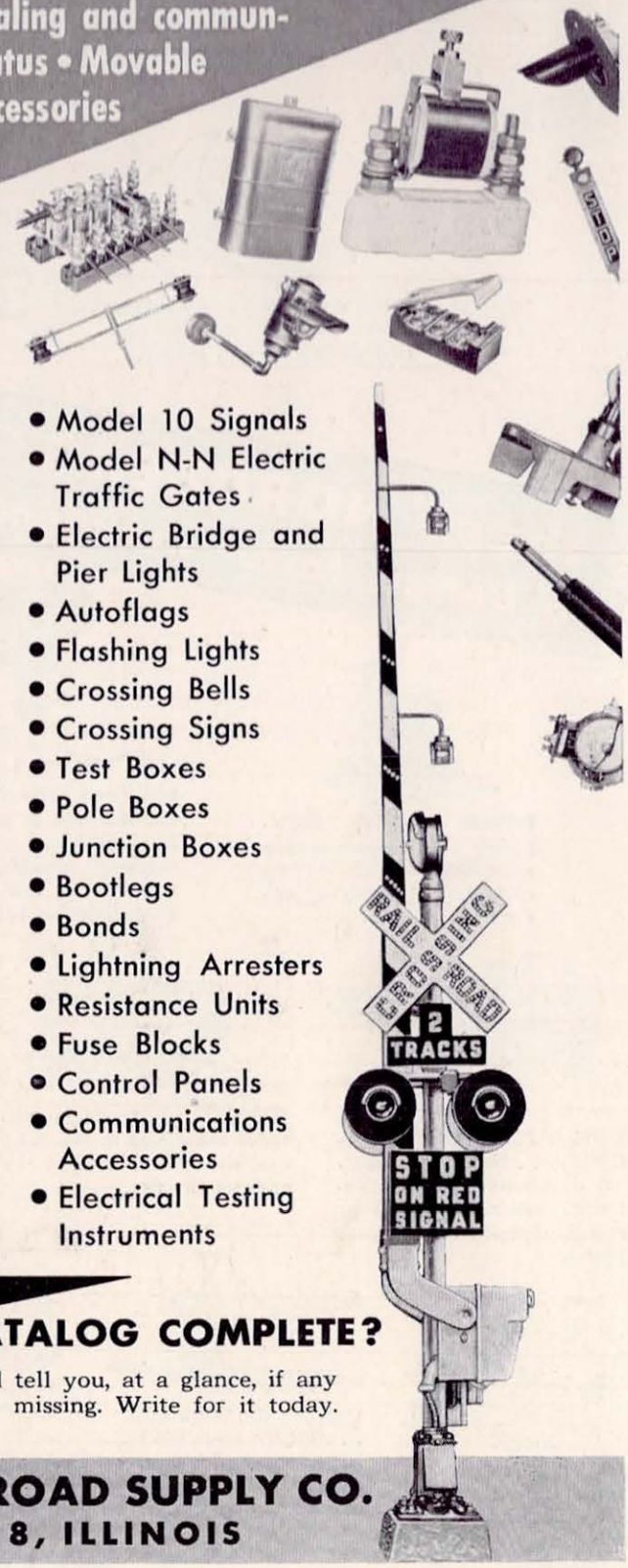
- Model N-N Electric Traffic Gates
- Electric Bridge and Pier Lights
- Autoflags
- Flashing Lights
- Crossing Bells
- Crossing Signs
- Test Boxes
- Pole Boxes
- Junction Boxes
- Bootlegs
- Bonds
- Lightning Arresters
- Resistance Units
- Fuse Blocks
- Control Panels
- Communications Accessories
- Electrical Testing Instruments



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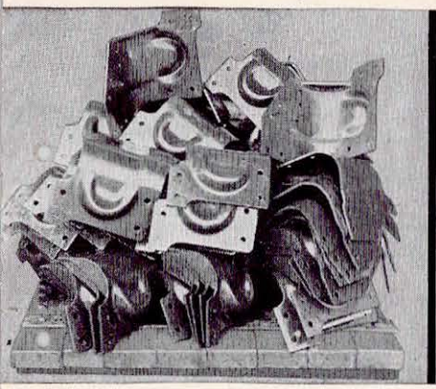
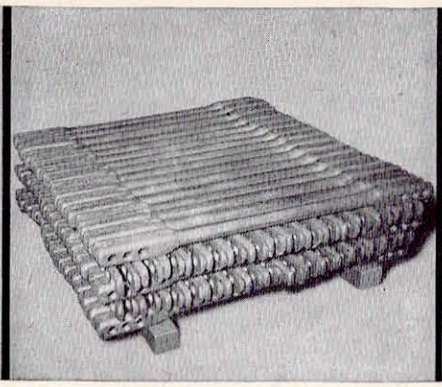
WESTERN RAILROAD SUPPLY CO.
CHICAGO 8, ILLINOIS

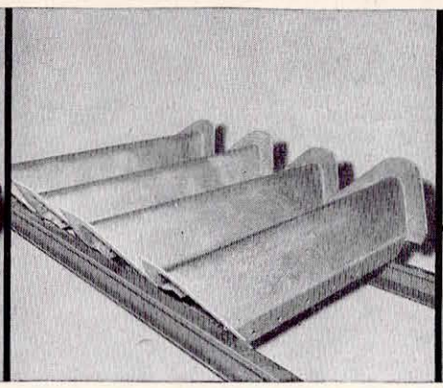
...parts and parcel to the railroad industry!



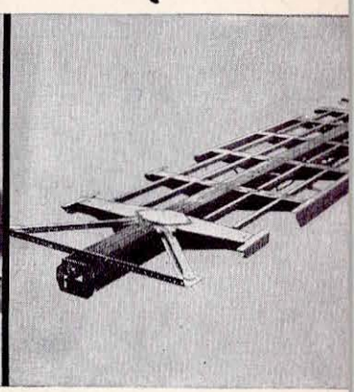
•Quantities of push-pole pockets destined for final assembly in a customer shop. Mass Production of all parts enables PSC to offer quality units at a lower cost in today's stepped-up market.



•These bottom rods are only one item produced in quantity in Pressed Steel Car's forge shops. Others include, grab irons, brackets, hooks, jaws, hinges, levers, pins and many more.



•Ready for finish and assembly are these hopper car hoods which have been through the shearing, pressing and punching operations. Another example of the facilities available for standard or custom fabrication in our press shops.



•Center sills, stringers, cross bearers and other component parts are offered separately along with the completely assembled underframe.

THE STORY OF

PRESSED STEEL CAR COMPANY'S STANDARD PARTS PROGRAM

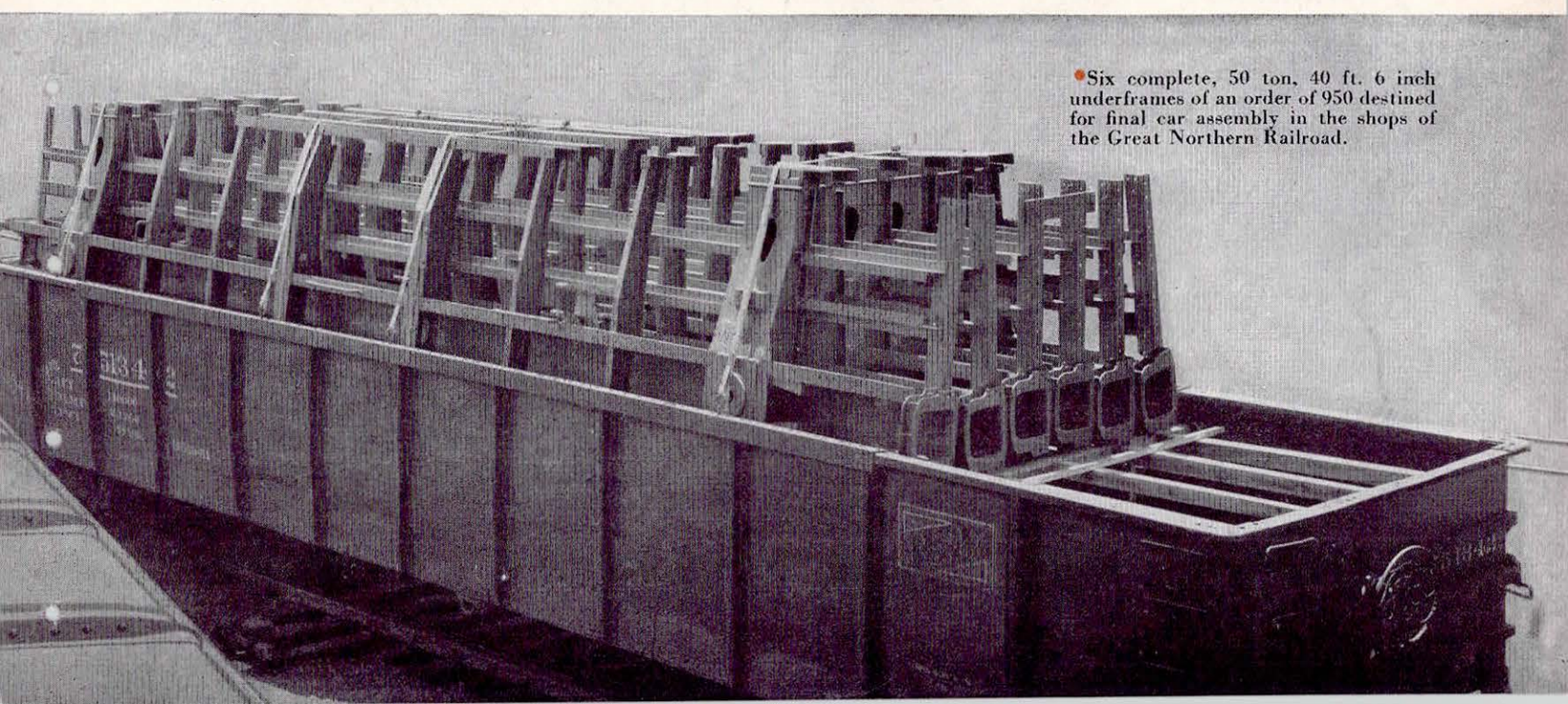
Pressed Steel Car is proud of its standard parts program which through the years, has become a "by-word" with many of America's railroads.

Each part, whether it be a forging, weldment, casting or pressing contributes to the overall strength, economy and efficiency of today's freight car. Engineering and metallurgical know-how are behind P.S.C's desire to supply the finest parts available from the smallest pin to complete underframes.

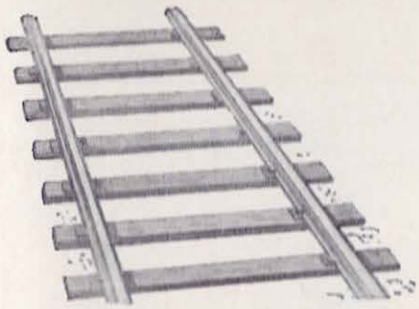
If your needs call for standard maintenance parts or complete car assembly in your shop we suggest that you inquire about PSC's program of supplying these parts more economically. Save time and money by writing today for further information on Pressed Steel Car Company's full production facilities.

PRESSED STEEL CAR COMPANY, INC.

6 North Michigan Avenue • Chicago, Illinois



•Six complete, 50 ton, 40 ft. 6 inch underframes of an order of 950 destined for final car assembly in the shops of the Great Northern Railroad.



Now! Exclusively for Railroads!

GENERAL CHEMICAL'S

Rite-o-way* BRAND

TCA-CHLORATE

and other

Weed Control Chemicals

NO ONE CHEMICAL can be a "cure-all" for the widely varying weed problems encountered by railroads from coast to coast. That's why General Chemical has developed its *Rite-o-way Brand* of weed killer formulations especially for railroad use.

THIS GROUP OF weed control chemicals is the outgrowth of General Chemical's long experience and extensive background in handling individual railroad weed control problems. One of General Chemical's most recent developments is Rite-o-way TCA—CHLORATE. This product contains a special high-strength formulation of sodium trichloroacetate and sodium chlorate—a combination that is now widely recognized as the outstanding all-purpose weed control material.

LET US TELL YOU MORE about General's Rite-o-way Brand weed killers . . . and how General Chemical's proven weed control program has achieved outstanding results for leading roads. A confidential conference with a General Chemical weed control specialist will show you how to take full advantage of General's "customized" weed control program for 1953. For further information, write to the address below.

*General Chemical trade-mark

GENERAL CHEMICAL WEED CONTROL

Weed Killer Department

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Following are General Chemical's Rite-o-way Brand Weed Killers. One or more of these can provide the right combination to give outstanding weed control results for your road. Investigate today!

TCA-CHLORATE
Special High Strength Formulation

Contains a special high-strength formulation of sodium trichloroacetate and sodium chlorate, now widely recognized as the outstanding all-purpose weed control material. Provides maximum root control for perennial weeds and grasses. Most effective when applied in post-frost and pre-frost months (early spring and late fall). Mid-summer treatments may be used for control of annual growth and perennial seedlings.

FORMULA 7
(TCA, Acid in an Oil Base)

For general purpose grass control. Used with diluting oil and one of the additives listed for over-all control of weeds.

FORMULA 7
(with 2,4-D)

Combines maximum contact "knock-down" of heavy foliage and residual control of root crowns, providing long-lasting suppression of regrowth. Used with diluting oil where grasses predominate, but includes sufficient 2,4-D to control moderate infestations of broad-leafed weeds.

FORMULA 7 B-D

Used with diluting oil for control of very resistant weeds and grasses. The amount of 2,4-D has been increased and fortified by pentachlorophenol.

SODIUM TCA
(Liquid Concentrate)

For control of noxious grasses. For all-purpose weed control when used with sodium chlorate or one of the 2,4-D additives listed.

EMULSIBLE AROMATIC OIL

Low cost contact weed control for temporary clearance of seedling growth and as interim treatment between seasonal applications for perennial root control.

2,4-D AMINE ADDITIVE

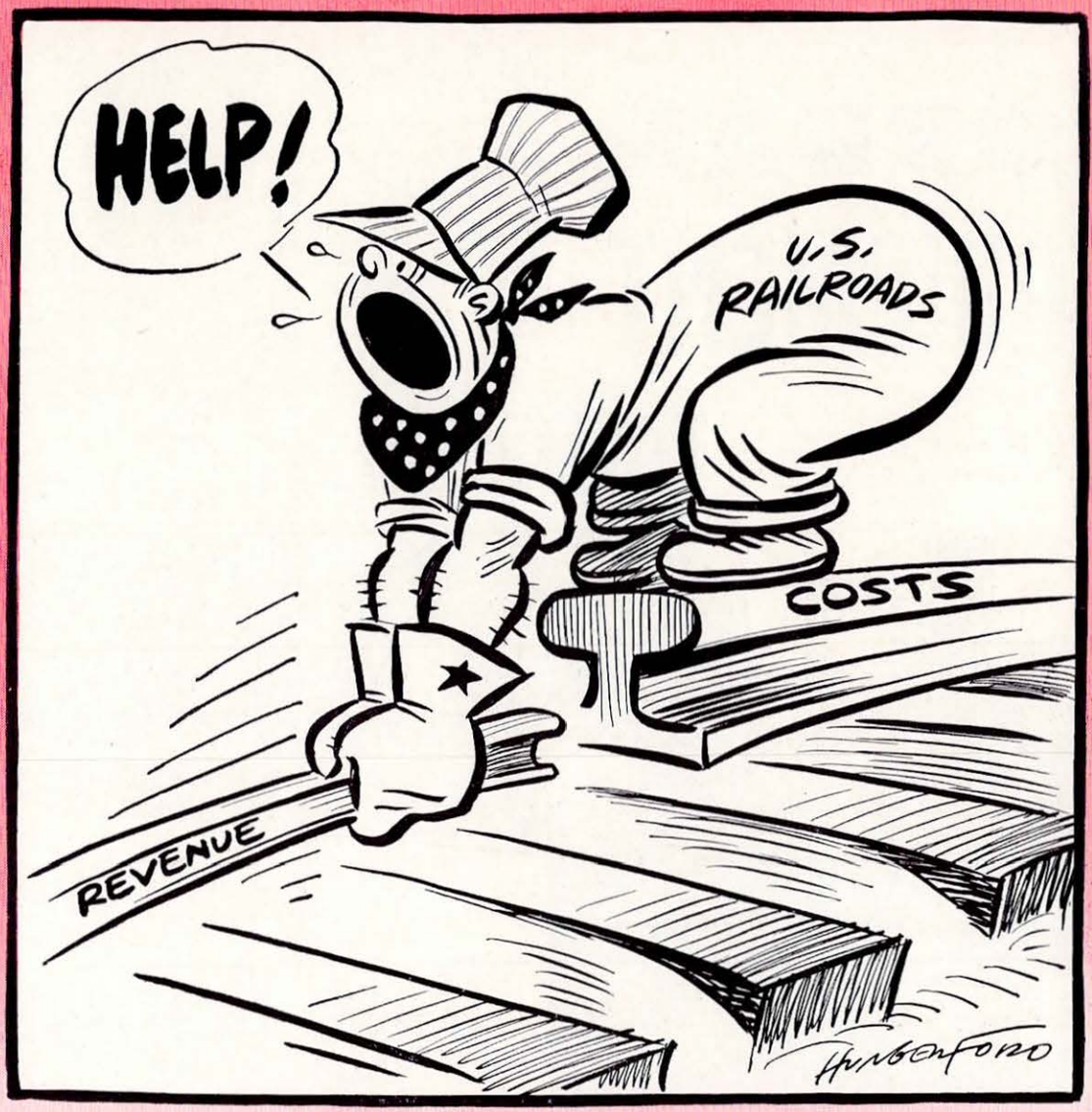
Used simultaneously with Formula 7 or mixed with Sodium TCA for all-purpose weed and grass control.

2,4-D ESTER ADDITIVE

For use with Formula 7 where cotton or other plants susceptible to 2,4-D are not adjacent to treated area.

2,4-D—2,4,5-T ESTER
Brush Killer (Water Soluble)

Trying To Make Ends Meet **By Hungerford**



Edgewater Steel Company

PITTSBURGH, PA.

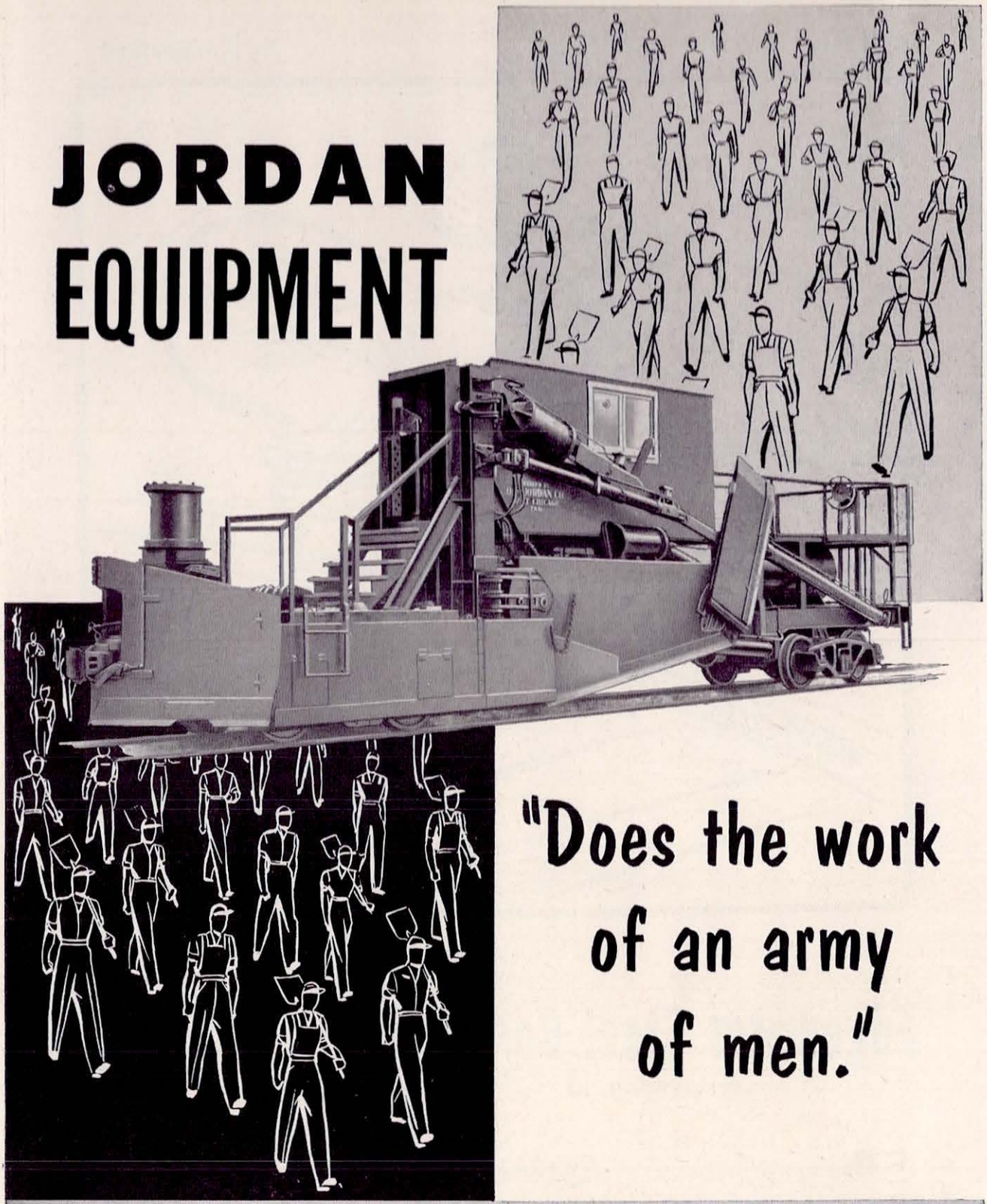
Serving America's Railroads with

ROLLED STEEL TIRES
ROLLED STEEL WHEELS
and **DRAFT GEARS**

Watch for other railroad cartoons by Mr. Hungerford

We will be glad to send you enlarged copies of this Hungerford cartoon (without advertising copy) for posting on your office and shop bulletin boards, or a cut for your company magazine, at cost.

JORDAN EQUIPMENT



"Does the work of an army of men."

SPREADERS · DITCHERS · SNOWPLOWS

O. F. JORDAN COMPANY

WALTER J. RILEY, *Chairman of the Board*

EAST CHICAGO, INDIANA

One of the marvels of engineering skill is the track of American railroads. It takes a terrific beating under every extreme of weather.

It is subjected not only to constant expansion and contraction but to tremendous shocks and stresses, as heavily loaded freights and fast passenger trains roll over it.

Fine track must have what it takes, and that's why the roads spend so much to lay it well and maintain it carefully.

IMPROVED HIPOWERS IMPROVE TRACK

SOUTHERN RAILWAY PHOTO

THE NATIONAL LOCK WASHER COMPANY, NEWARK 5, N. J., U. S. A.

A COMPLETE LINE OF RAILWAY SPRING WASHERS

Railroads, too, can get "into the act" with N·S·F

NAILABLE STEEL FLOORING

" . . . In the handling, storing, packaging and transporting of materials . . . we have a new and challenging field—a whole new concept of manufacturing methods, with *the greatest potential for industrial progress since mass production—the idea of mechanizing materials handling* . . . There has been a great deal of improvement, over the last five years, in all types of materials handling equipment . . . and we expect everyone who has to do with handling to *get into the act.*"

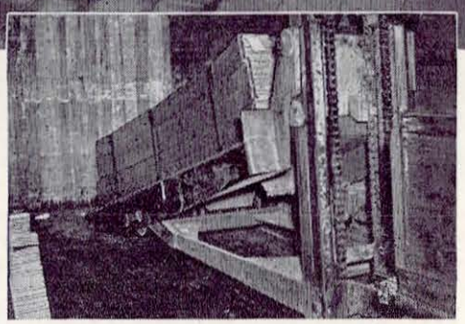
—D. S. Harder, Vice President
Ford Motor Company
before Materials Handling Conference,
Detroit, October, 1951

Now railroads can actually improve their own operations and help shippers take advantage of new materials handling methods too!

Yes—by installing NAILABLE STEEL FLOORING in boxcars and gondolas.

NAILABLE STEEL FLOORING carries every kind of *load*—blocked, skidded, bulk, etc., with maximum security. It withstands the concentrated weight of lift trucks, the impact and shock of other methods of loading. Formed of tough N-A-X HIGH-TENSILE steel, N-S-F increases structural strengh of cars and cuts down maintenance costs.

IN BOXCARS



For finished freight . . . as well as base materials

IN GONDOLAS

For skidded loads and blocked loads . . . or mechanical handling devices

Sales Representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal and New York.

52-SF-10

N-S-F for NAILABLE STEEL FLOORING SAFER-STRONGER

PATENTS PENDING

GREAT LAKES STEEL CORPORATION

STEEL FLOOR DIVISION Ecorse, Detroit 29, Michigan

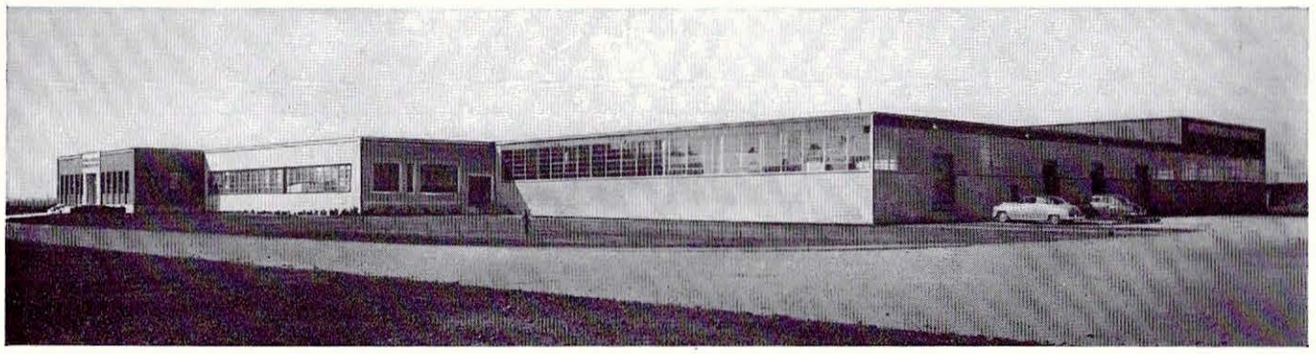
PRODUCER OF N-A-X HIGH-TENSILE STEEL

NATIONAL STEEL CORPORATION

NATIONAL STEEL

GOULD OPENS 21ST PLANT

TO MEET INDUSTRIAL BATTERY DEMAND



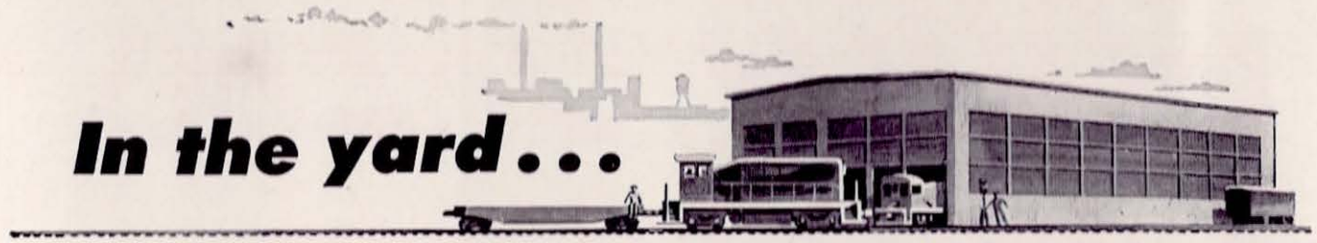
Front and side views of Gould's new Kankakee, Ill., plant

GOULD'S NEW KANKAKEE PLANT which went into production on November 10 is the 21st Gould plant in the United States and Canada. Devoted entirely to the manufacture of storage batteries for industry, it gives Gould the additional capacity necessary to meet the increased demand for Gould batteries in all parts of the country. Thanks to these new facilities, Gould customers can expect even faster service than before.

GOULD *Industrial Batteries*

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries



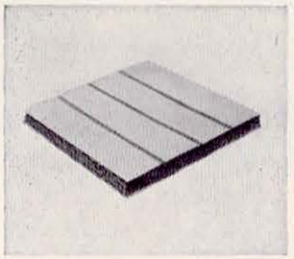
Johns-Manville men and materials help you improve passenger comfort and cut maintenance costs

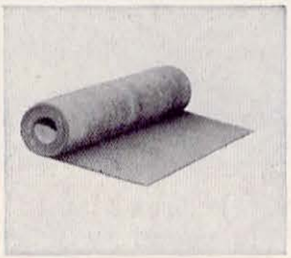
Shown below are four—of many—Johns-Manville products that have *proved* their ability to cut costs and add to passenger comfort in thousands of railroad installations across the country.

Such products do their job well . . . provide the greatest economy in service . . . and last through the years, because they were designed, engineered and manufactured with the highest standards of quality as a basic objective.

Your Johns-Manville representative will be glad to help you decide which of these and other Johns-Manville products can be best used to help reduce your costs and increase the comfort of your passengers.

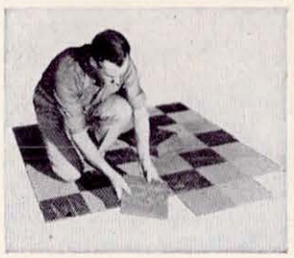
J-M STONEFELT INSULATION—This especially designed blanket type insulation for passenger cars helps keep car temperatures uniform regardless of the weather outside. Installed in the car superstructure, Stonefelt muffles external noises, helps keep down air-conditioning and heating costs.

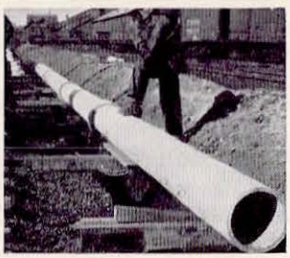




J-M BUILT-UP ROOFING—Johns-Manville Asbestos Built-Up Roofs assure long service life for minimum initial expense. Made of asbestos, each ply is a flexible covering of stone that won't dry out under long exposure to the elements. The finished roof is smooth surfaced to provide thorough drainage. It requires no periodic coating for preservation.

J-M TERRAFLEX FLOORING—This colorful vinyl plastic asbestos tile flooring gives an amazing amount of wear on car and station floors. It is unusually resilient underfoot, yet tests have shown that it withstands abrasion at least two to three times better than standard asphalt tile. It is resistant to fire, greases, oils, alkalis and mild acids.





J-M TRANSITE PRESSURE PIPE—This asbestos-cement pipe cuts water line costs because it is highly corrosion resistant. Flexible joints enable it to withstand an unusual amount of vibration. Its high water-carrying capacity keeps down pumping costs and its light weight and easily assembled joints make for economical installation.

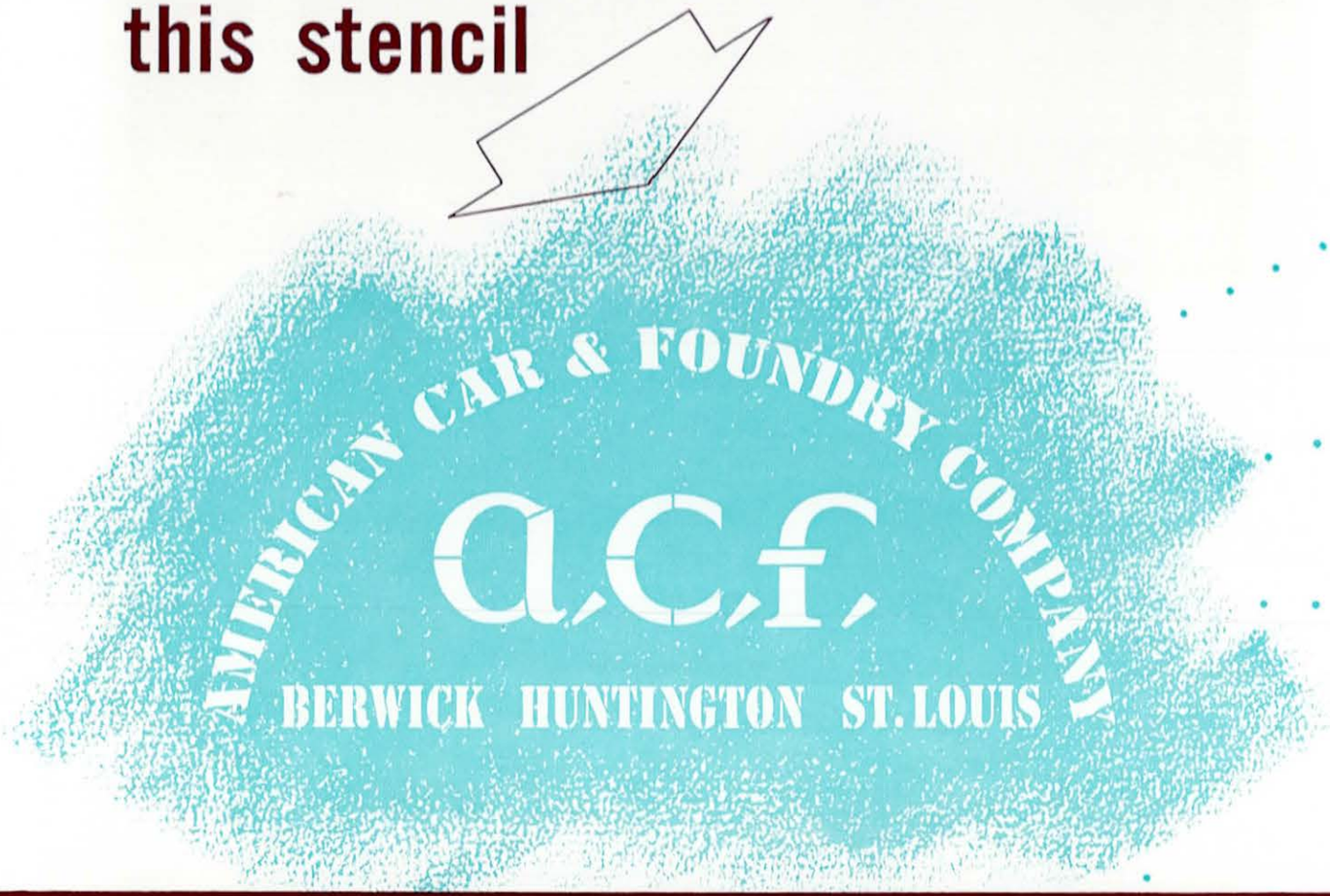
For further information on these and other Johns-Manville products, get in touch with your J-M Representative, or write Johns-Manville, Box 60, New York 16, N. Y.

JOHNS-MANVILLE JM PRODUCTS **Johns-Manville** 95 YEARS OF SERVICE TO TRANSPORTATION

This is Curtis Hill. He stencils this signature on a.c.f. Freight Cars. But what's behind this stencil of Curtis'—what goes into these Cars that Railroads find are better built, greater maintenance-free-mileage Cars?

here's part of the answer...

NOW more than 70% of the Cars with this stencil

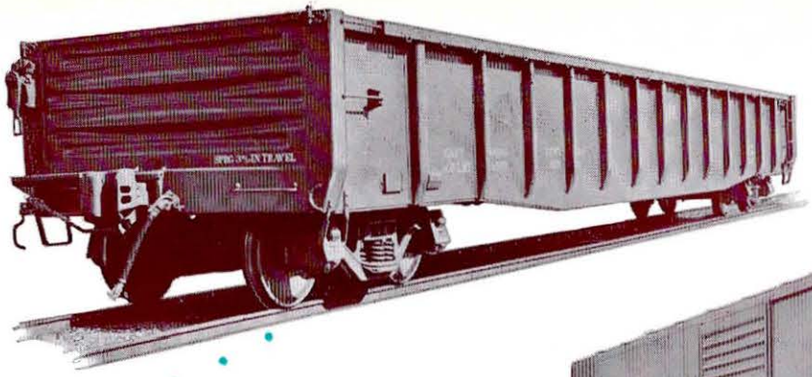


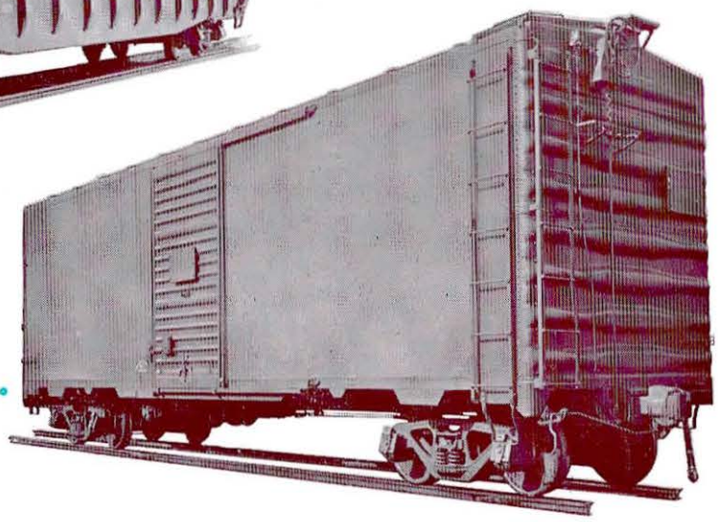
are of road-proved STANDARDIZED

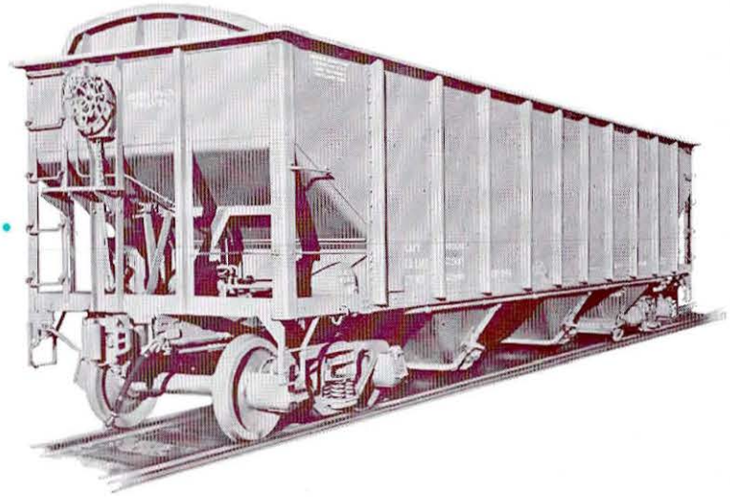
a.c.f. STANDARDIZED DESIGN Cars were evolved from the best of designs... from *many* Railroads' specifications, incorporated in one outstanding Car. With such standardized design, mass production facilities may be employed with a resultant economy.

a.c.f. STANDARDIZED DESIGN eliminates Railroad duplication of such a huge investment in shops, tooling and personnel.

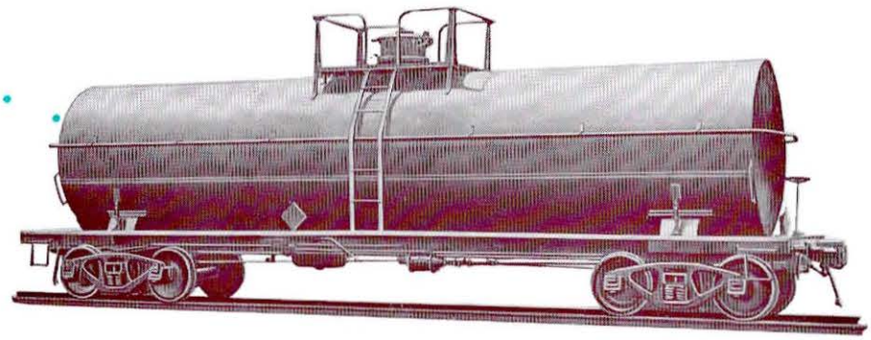
a.c.f. STANDARDIZED DESIGN means tighter construction with interchangeable accuracy... faster delivery... savings in a Road's overhead and fabrication. The advantages are endless.

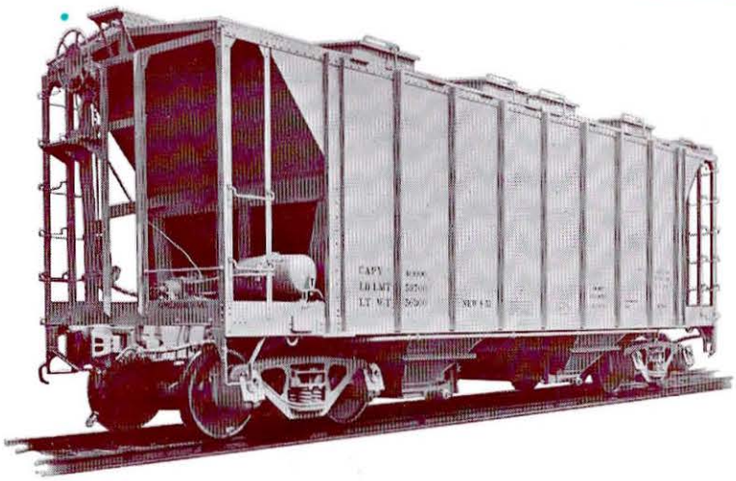






DESIGN



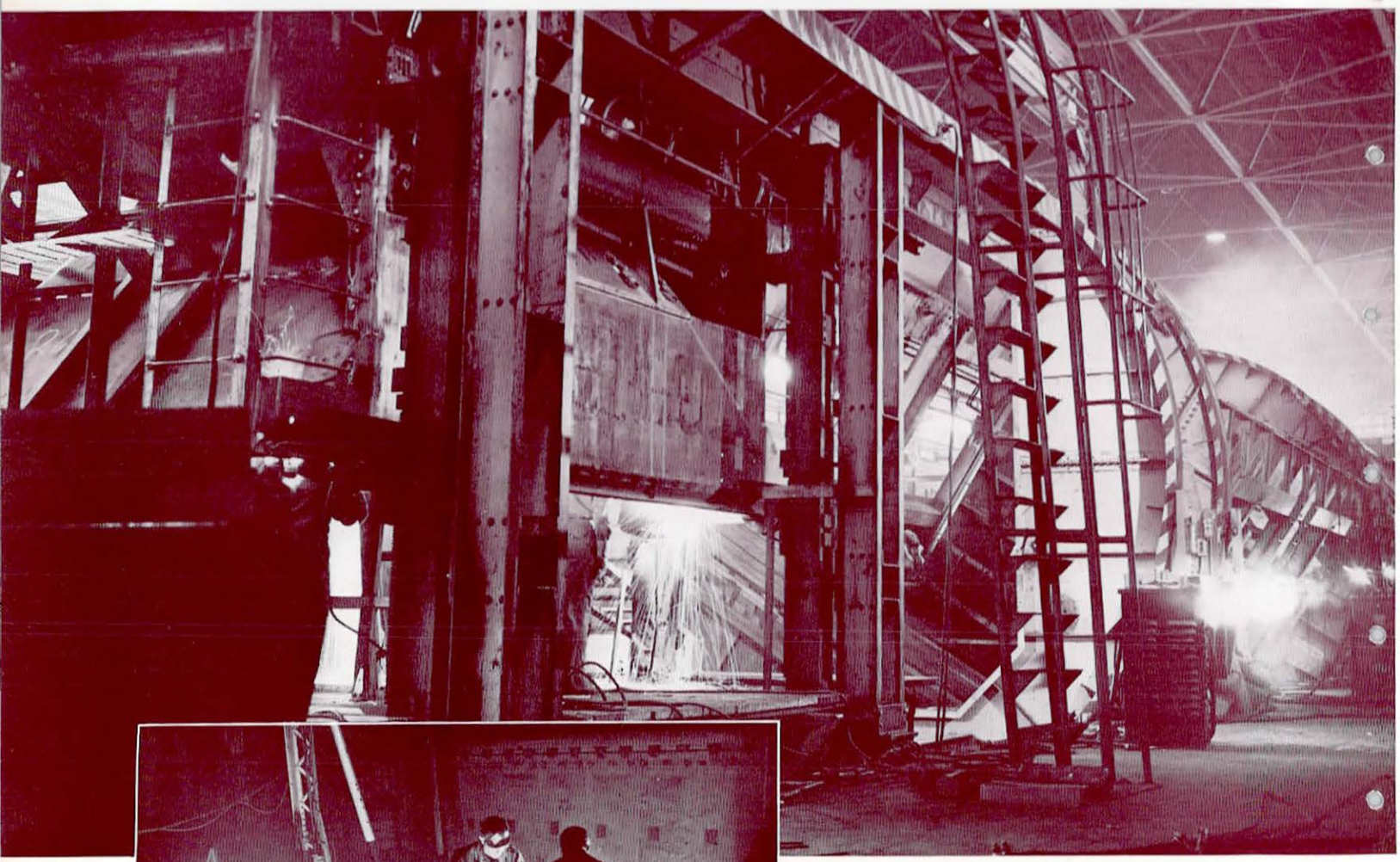


now let's look at the

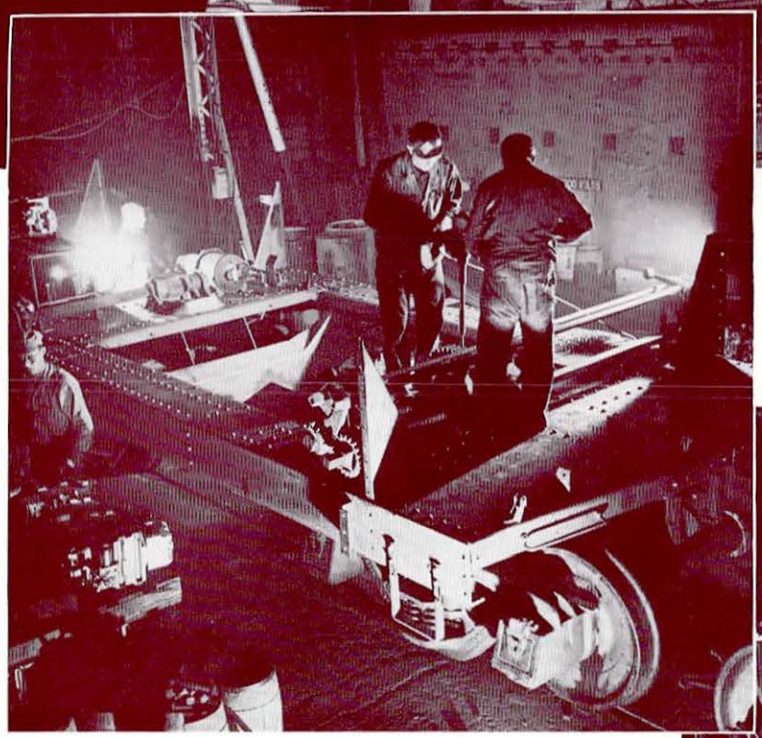
A.C.F. FACILITIES

Fabrication Facilities are *FABULOUS!*

Speed dominates the scene! Every man is a specialist doing his particular job with the sureness of a surgeon. Precision-cut parts, jig-registered sub-assemblies of interchangeable accuracy are the order of the day. So, too, are giant Special Tools for forming, assembling and weld-positioning center sills, underframes, side and end panels—yes, and even whole cars.

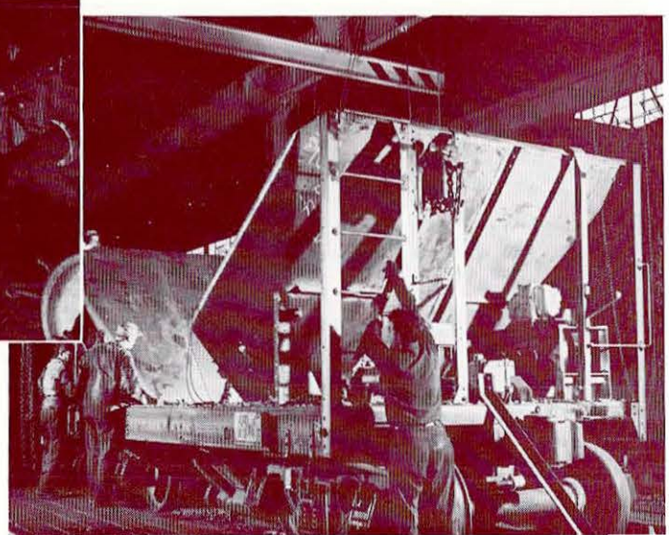


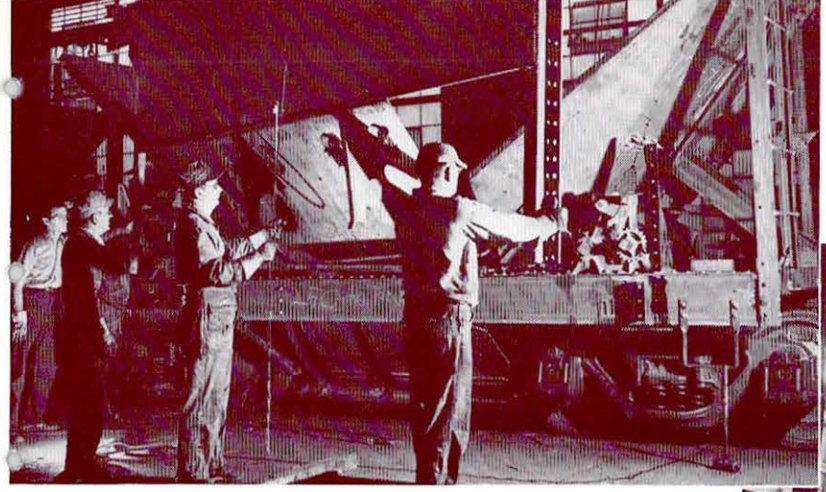
Ore Car in roll-over position



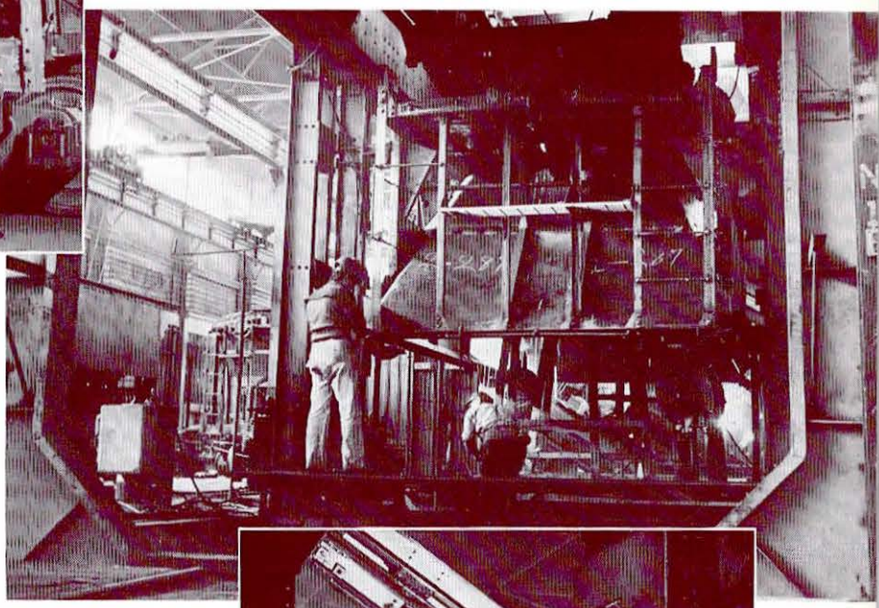
Drilling for adaptation
of dumping mechanism

Applying end sheets
to Ore Car

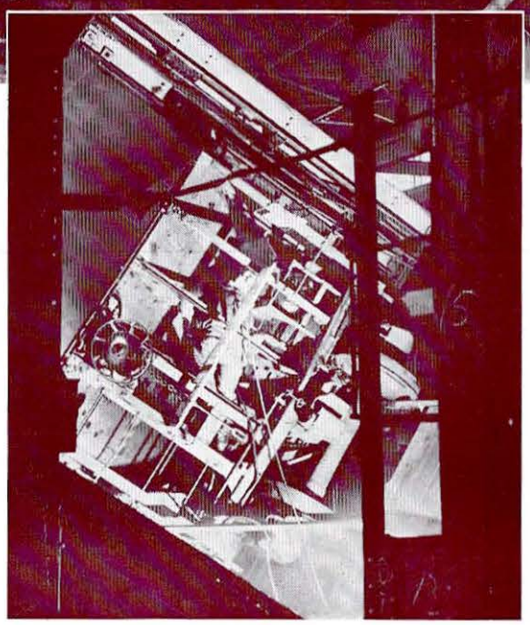




Applying sides to Ore Car



Ore Car in first
roll-over position

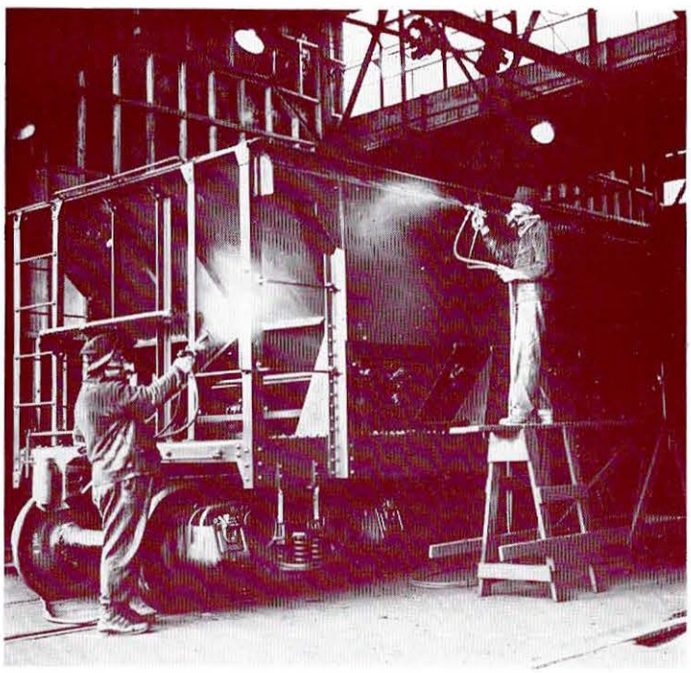


Welding, last
roll-over position

AMERICAN CAR & FOUNDRY COMPANY

a.c.f.

BERWICK HUNTINGTON ST. LOUIS



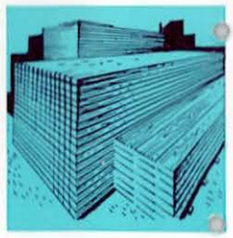
Spraying first coat
of paint on Ore Car

THESE ARE THE CARS with the STENCIL . . . and these are but a few of the operations and methods that are behind this well-known mark of quality.

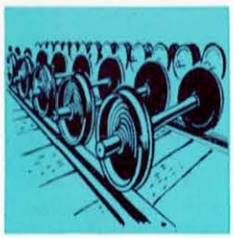
YES . . .

...it takes a heap of building

TO MAKE A BETTER BOX CAR!

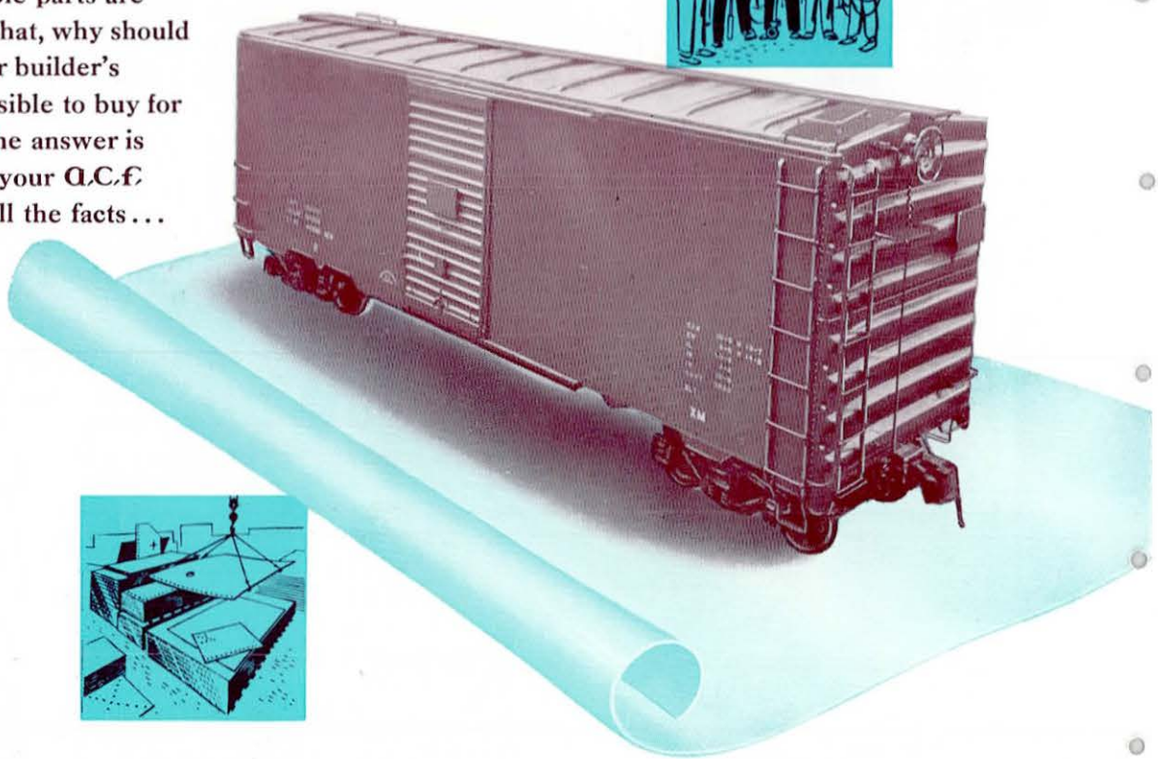


Tons of materials and thousands of man-hours go into making *any* box car. But to make a *better* box car—it takes more, many more ingredients than these! At A.C.F.'s plants (considered by many to be the finest Railroad Car building facilities in the world), engineering research probes *all* Railroads requirements—sifts ideas—then screens out all but the best features for their better-built, assembly line, Standardized Cars.



TO BUILD OR TO BUY?

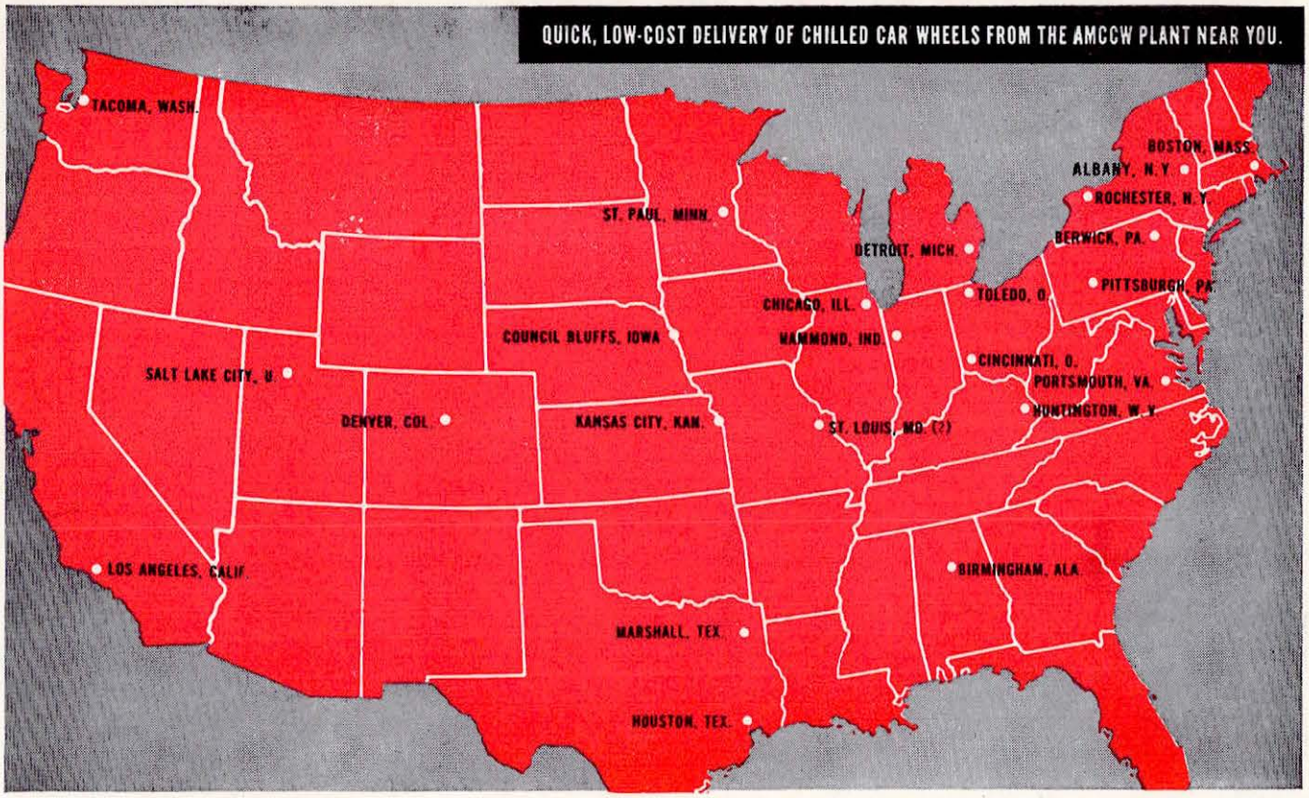
The maintenance advantages of a car with completely interchangeable parts are obvious. But more than that, why should a Railroad duplicate a car builder's investment when it's possible to buy for less. Again, we believe the answer is obvious. Why not call in your A.C.F. Representative and get all the facts...



New York
Chicago
St. Louis

a.c.f. CAR BUILDERS TO AMERICA'S RAILROADS

Cleveland
Philadelphia
Washington
San Francisco



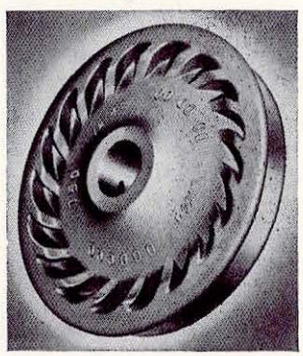
AMCCW Car Wheels save money for your railroad

coming *and* going

coming . . . When new car wheels are coming in, you'll find AMCCW wheels have the shortest haul, and consequently the quickest delivery. Chilled car wheel inventory can be kept to a minimum . . . and costly foreign line haul is usually eliminated.

going . . . You can ship worn wheels and other scrap conveniently to the nearby AMCCW plant, where it will be credited in exchange for new AMCCW wheels or bought at the going price.

coming and going . . . Chilled car wheels save money for your railroad by their low first cost, favorable exchange rates, easier shop handling; and by their high safety standards, plus the increased ton mileage they deliver.



THE IMPROVED CHILLED CAR WHEEL
more brackets—thicker, heavier, more continuous flange support; heavier tread on both rim and flange sides.

In good supply
Available locally
Short-haul delivery
Reduced inventory
Low first cost
Low exchange cost
Increased ton mileage
High safety standards
AMCCW plant inspection
Easier shop handling

AMCCW

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

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Albany Car Wheel Co. • American Car & Foundry Co.
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* Missouri Pacific Lines
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*One of many leading railroads using Lewis Sealtite products.

The nation's great railroads use Lewis Sealtite fasteners. Accurately engineered, designed to do a better job, Sealtite products are tough, durable, made of finest grade metals for heavy duty. They meet the most exacting specifications.

More than 20 years of manufacturing experience have established Sealtite's top quality in the industry. Such famous Sealtite features as the patented fins, for better seating, Sealtite's accurate threading, for easy installation, and many others, have given Lewis Sealtite products a "Class I" reputation in the field.

The next time you specify fasteners, specify Lewis Sealtite, a complete line of first grade fasteners for America's leading railroads.

All Sealtite products are available in HOT-DIP GALVANIZED, SEALED-IN-ZINC finish, which stops rust and corrosion. Tests prove that the molten zinc bath gives Double-Life, greater economy through fewer replacements.

Serving 85% of America's Class 1 Railroads

See your Lewis representative, or contact factory for samples, prices, full details.

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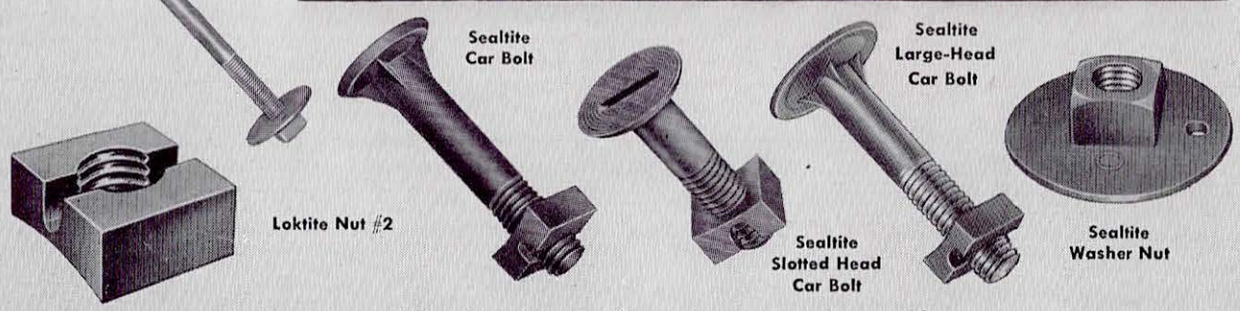
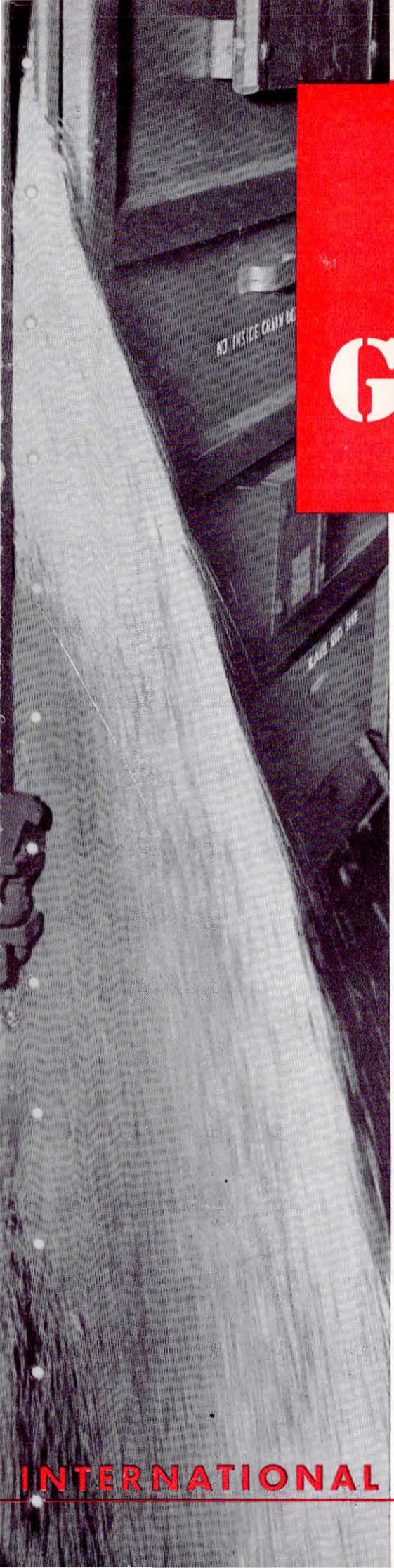
504 Malcolm Ave. S. E.
Minneapolis 14, Minnesota

LOOK FOR THIS STAMP OF U QUALITY



Sealtite Car Bolt
Sealtite Large-Head Car Bolt
Loktite Nut #2
Sealtite Slotted Head Car Bolt
Sealtite Washer Nut

Sealtite Bolts available with Loktite Nut #2, washer nut, or std. sq. and hex. nuts.



NO INSIDE GRAIN DOOR

SHIPPERS AND RECEIVERS WELCOME THIS ALL-PURPOSE BULK-LADING DOOR . . .

the answer to the grain door problem

International

THERE'S A NEW PRECISION IN FREIGHT CAR CONSTRUCTION

No one needs to be told the advantages of eliminating the *procurement,* distribution, *installation,* employee hazard, *door post damage,* yard debris and other *countless problems* of the *inside grain door!*

But *beyond* these *actual out-of-pocket* cost and confusion factors, this bulk-lading door (because it is *properly* designed and constructed) not only eliminates *bulging* completely but is engineered to *utilize* as well as *withstand* internal pressure!

And note the *loading* and *inspection* door!

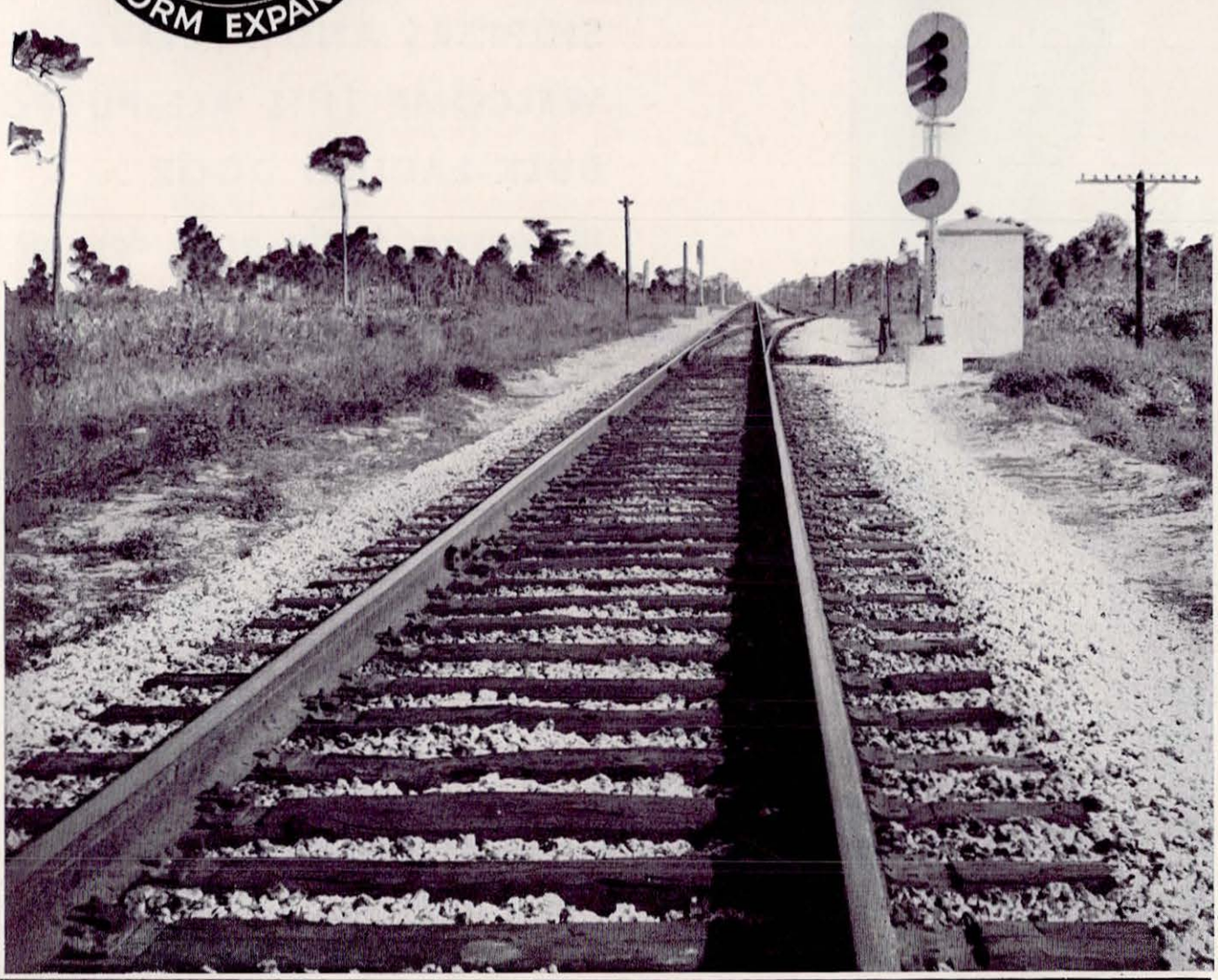
After a hundred years of battling the bulk lading problem, on-the-line tests *prove* that the International All-Purpose, Bulk-Lading Door *is* the answer!

INTERNATIONAL STEEL COMPANY RAILWAY DIVISION
EVANSVILLE 7, INDIANA

COMPRESSION
Rail Anchors

Compression-held rail does not run in either direction, which is particularly important for C.T.C. and other remote control layouts.

Protect these vital installations with *two-way holding* Compression Rail Anchors.

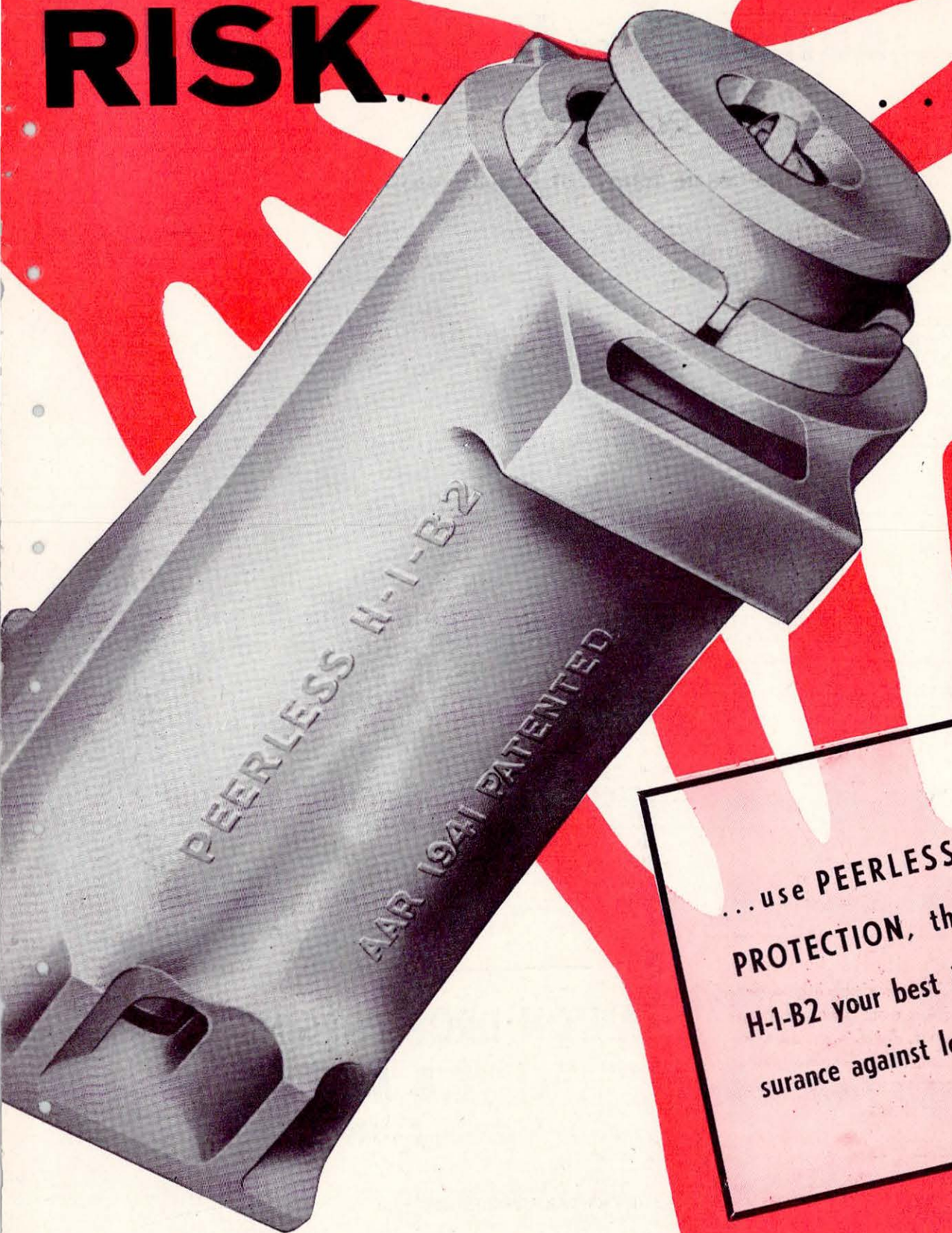


THE RAILS COMPANY

General Office
178 GOFFE STREET, NEW HAVEN 11, CONN.

ST. LOUIS, MO. HOBOKEN, N. J. CHICAGO, ILL.

WHY RISK...



...TODAY'S HIGH PRICED LADING?

...use PEERLESS PROTECTION, the H-1-B2 your best insurance against loss!

PEERLESS EQUIPMENT COMPANY

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EQUALIZER BARS · CROSS BARS · ADAPTERS

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BUILDERS OF MODERN *"Streamliners"*

. . . the "name trains" of famous roads,

Accept the proven construction factors of today while envisioning the needs of the future. They specify "CANTON" Forgings for many vital stress points

Because . . .

because . . .

SAFETY IS HAMMERED INTO EACH PART, COMPACTING THE METAL FOR GREATER STRENGTH AND RIGIDITY.

because . . .

LONG WEAR IS ATTAINED WHEN SELECTED METALS ARE FORGED IN SPECIAL DESIGN FOR SPECIFIC DUTY.

because . . .

ECONOMY IS ASSURED SINCE UNIFORM FORGINGS CAN BE PRODUCED ON MASS PRODUCTION BASIS.

Close engineering supervision over parts development, die design, die construction, forging, heat treating and machining operations.

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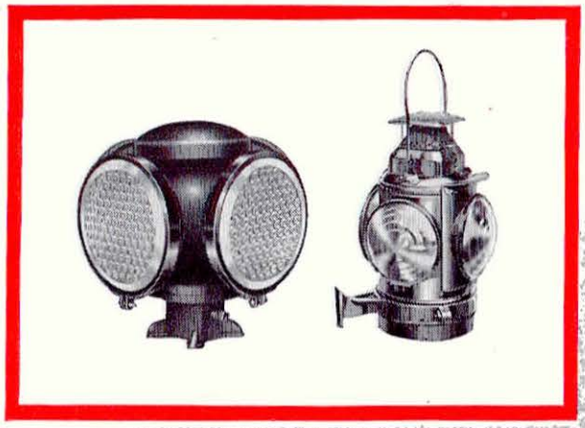
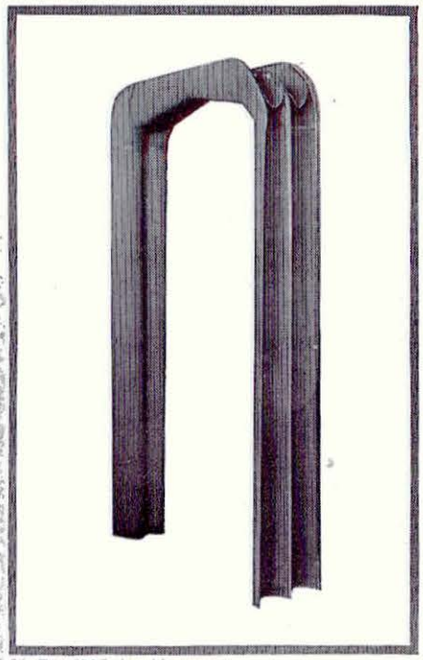
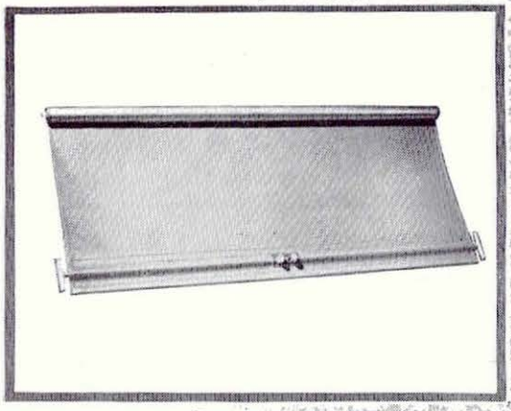
CANTON, OHIO

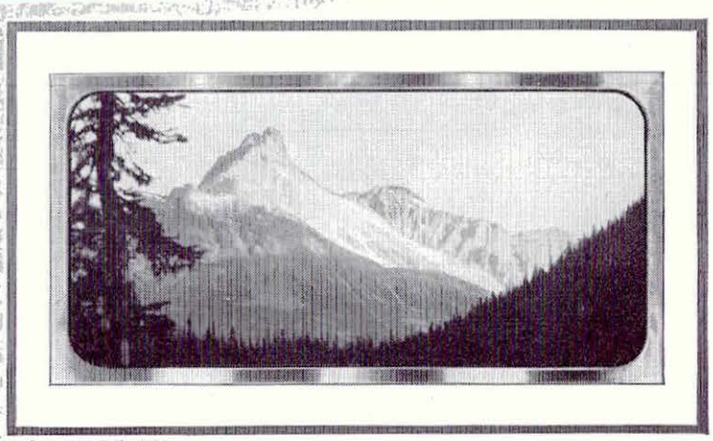
DROP FORGINGS FOR PARTICULAR USERS SINCE 1903

CENTER PLATES · YOKES · HANDHOLDS









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OF RAILROAD SPECIALTIES BY

Windows—Double glazed "breather" or raised
Curtains—Window or vestibule
Lanterns—Oil or electric
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ADLAKE
a synonym for "Integrity" in the Railway Industry

Adlake
TRADE MARK

96th year
of serving the transportation and building industries

The Adams & Westlake Company
Established in 1857
Chicago • ELKHART, INDIANA • New York

UNSURPASSED PROTECTION

The distinguishing characteristics of Westinghouse Friction Draft Gears are ample capacity, high shock absorption, and minimum recoil, thus assuring unsurpassed protection to Car Structures and Lading.

Specify
WESTINGHOUSE
FRICTION DRAFT GEARS
Certified A.A.R.

According to the Association of American Railroads, more than 98% of cars in freight carrying service are A.A.R. construction and are equipped with Friction Draft Gears

CARDWELL
FRICTION BOLSTER SPRINGS
for A.A.R. and Long Travel Springs

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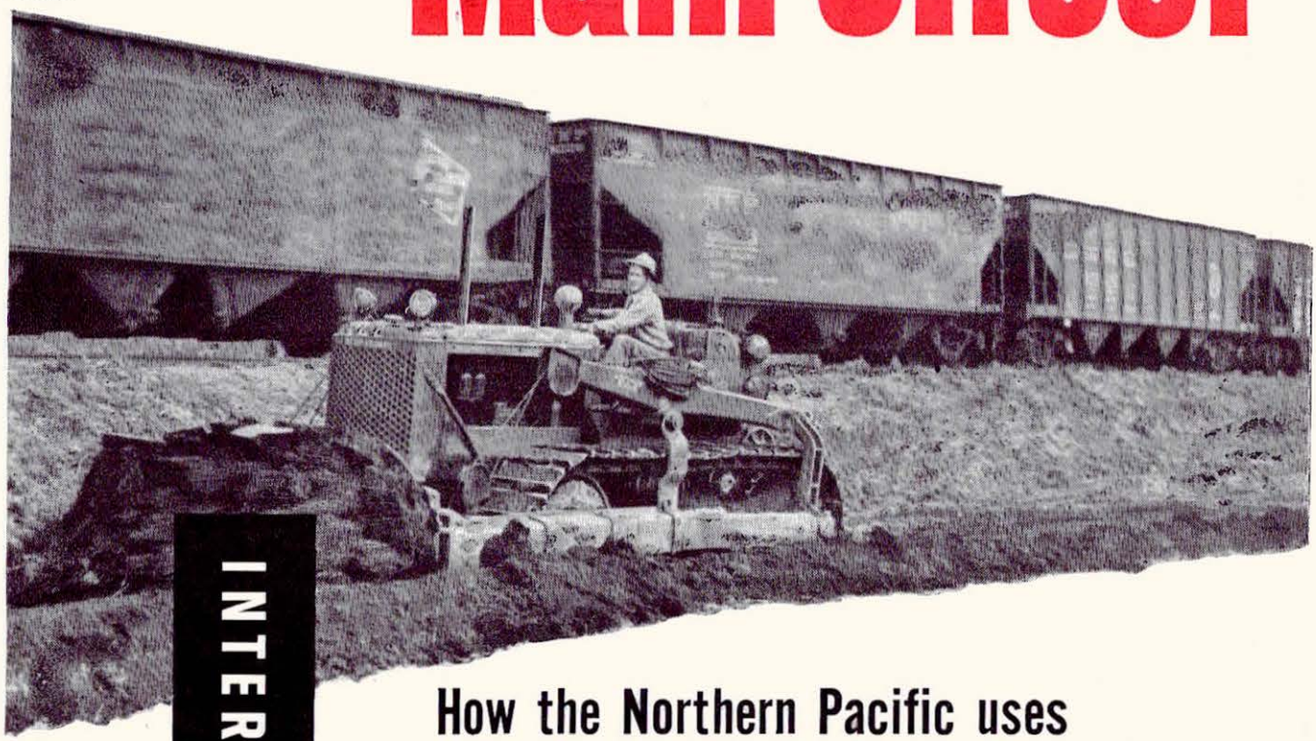
Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co., Ltd., Montreal

Grading On "Main Street"

ONE-MAN OPERATION. Loaded with power, an International TD-18 makes light work of grading on the Lake Superior Division of the Northern Pacific.



INTERNATIONAL

INTERNATIONAL HARVESTER

POWER THAT PAYS

How the Northern Pacific uses International power on the "Main Street of the Northwest"

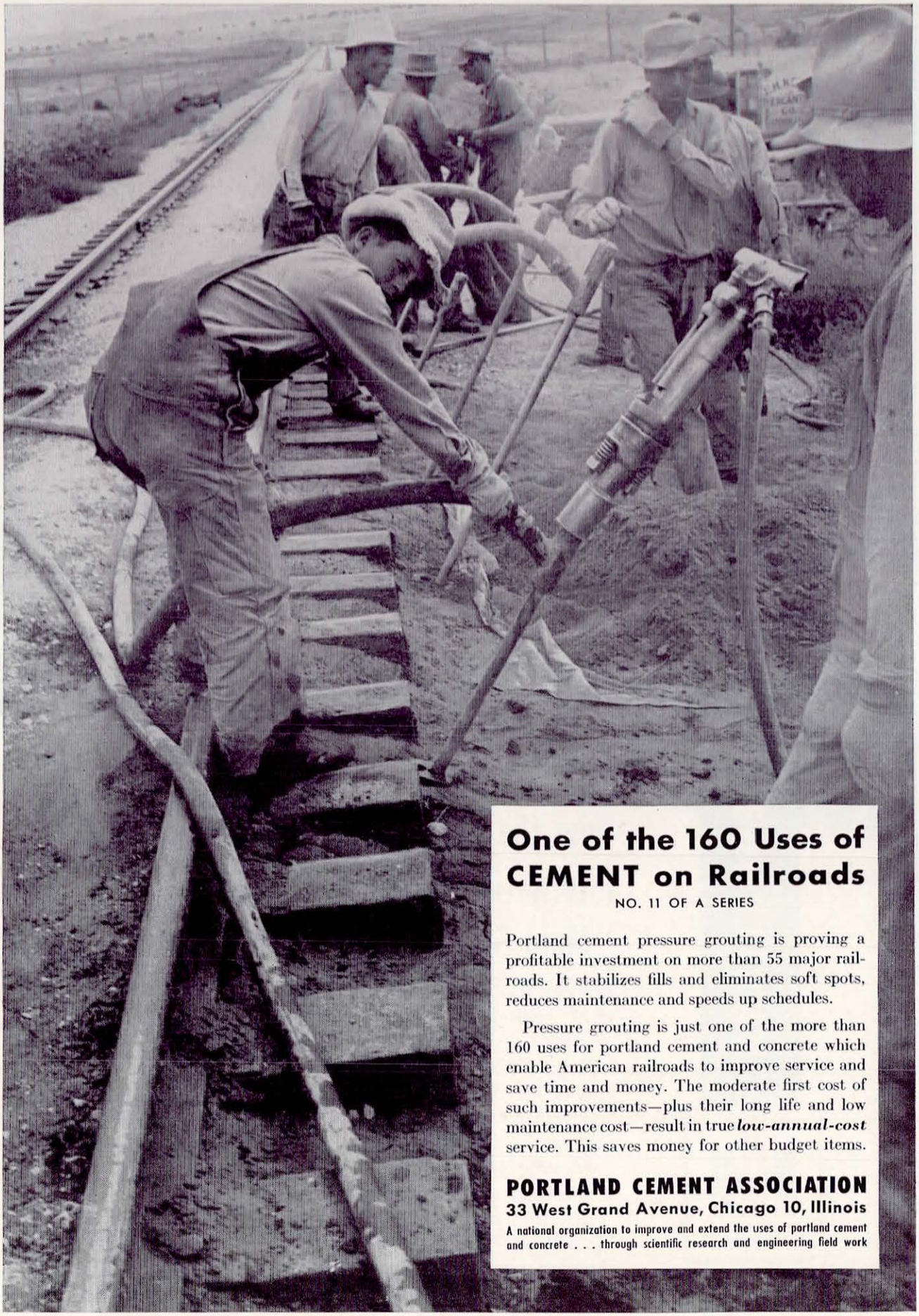
Heavier traffic riding the rails on the "Main Street of the Northwest" means more banking and grading on the Northern Pacific roadbed.

For example, on the Lake Superior Division, 25 miles northeast of Minneapolis, the Northern Pacific uses the International TD-18, pictured here, to speed up maintenance and prepare new roadbed for siding and passing tracks.

Moving clay and dirt along the right-of-way, the TD-18 moves it the right way—faster, easier and at lower cost.

Get the facts from your International Industrial Distributor. He'll show you how to make the most of your man-hours and maintenance dollars with International *"Power that Pays."*

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS



One of the 160 Uses of CEMENT on Railroads

NO. 11 OF A SERIES

Portland cement pressure grouting is proving a profitable investment on more than 55 major railroads. It stabilizes fills and eliminates soft spots, reduces maintenance and speeds up schedules.

Pressure grouting is just one of the more than 160 uses for portland cement and concrete which enable American railroads to improve service and save time and money. The moderate first cost of such improvements—plus their long life and low maintenance cost—result in true ***low-annual-cost*** service. This saves money for other budget items.

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33 West Grand Avenue, Chicago 10, Illinois

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

SERVICE PIN... for you, too

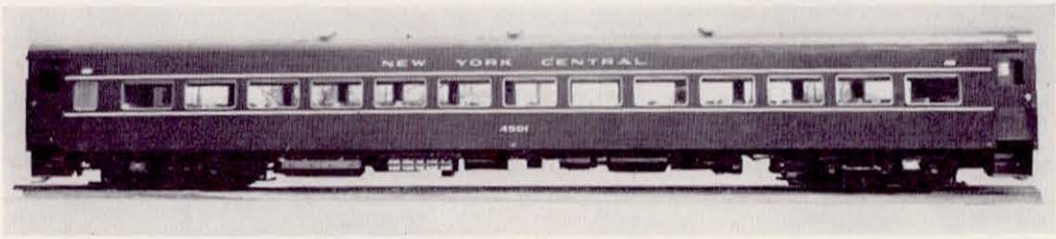
Chances are you've seen this pin. It represents 20 years of service with Socony-Vacuum. The average length of service of all our representatives calling on railroads is well above this figure. All this petroleum experience—the world's greatest—is yours when you call in Socony-Vacuum. Why accept anything less?

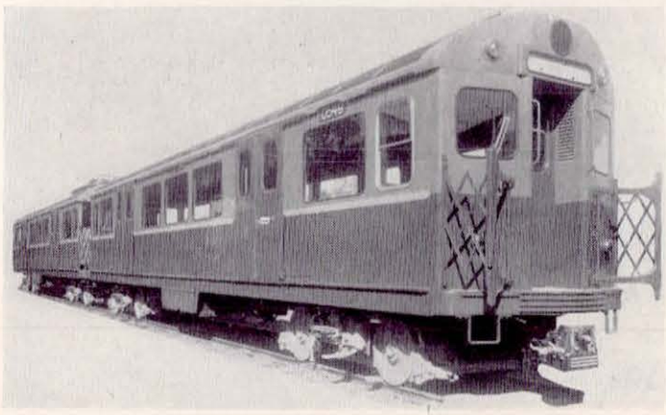
Socony-Vacuum Railroad Lubricants *Correct Lubrication*

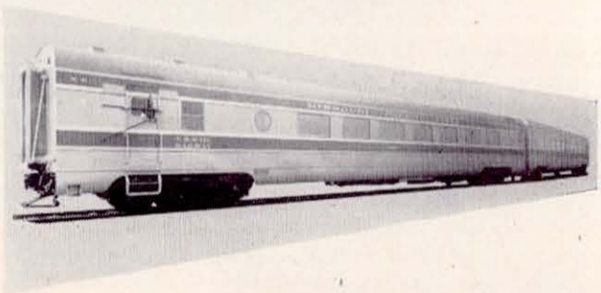
WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

SOCONY-VACUUM OIL COMPANY, INC., RAILROAD DIVISION, 26 BROADWAY, NEW YORK 4, N. Y.

"St Louis Built"







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You can triple the life of your right-of-way fencing

with pressure-creosoted fence posts

AN untreated fence post usually must be replaced after less than 10 years of service. Sometimes it will decay badly in as little as 3 years!

In contrast, a pressure-creosoted fence post will last *30 years or more!* Actual service records on leading American railroads show that you can expect more than 3 times the service from pressure-creosoted posts as you get from untreated posts.

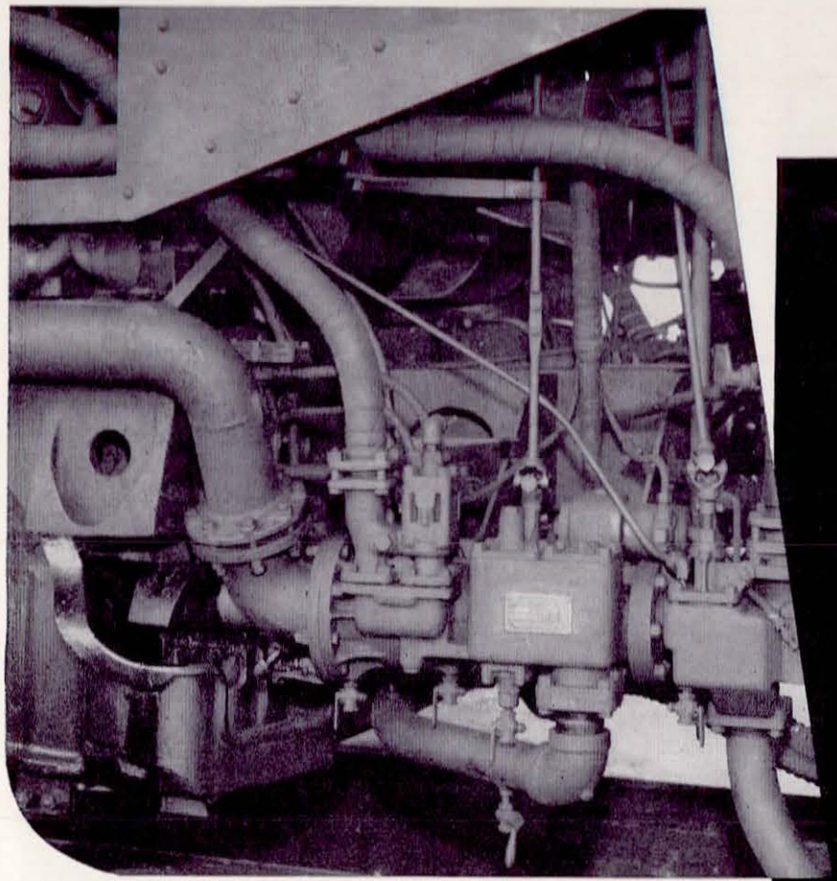
This drastically cuts your fencing costs. You buy fewer posts, pay less labor for replacing posts, and you get longer, lower-cost service from your fences. It *really* pays to use pressure-creosoted fence posts.

You can make comparable savings by using pressure-treated wood for poles, car decking, piles, and structural timber.

Whatever type of treated wood you need, Koppers has the experience and technical facilities to supply it . . . *when* you need it, in *any quantity* you need.

KOPPERS **PRESSURE-TREATED WOOD**

Koppers Company, Inc. · Pittsburgh 19, Pa.



The Quick Easy-to-Use Efficient Wrap-On Insulation

INSUTAPE®

Unarco Wrap-On Insutape is ideal for sharp-curving pipes; close clearances; difficult-to-reach locations. It withstands intense heat, weather, vibration—saves fuel—protects personnel. And this neat, trim insulation may be removed and reapplied repeatedly without loss of high efficiency. That's why, for long service life and effective economy, railroads have *standardized* on Insutape for both steam and Diesel locomotives. Made of long-fiber asbestos rovings enclosed within a tubular, woven asbestos jacket, heavily Neoprene-coated to resist abrasion, moisture, oil, and grease. Insutape actually pays-its-way in savings.

UNARCO

Write for new Insutape Folder, Form No. 76-135

UNION ASBESTOS & RUBBER COMPANY

332 SOUTH MICHIGAN AVENUE • CHICAGO 4, ILLINOIS

Film thicknesses of 2 mils and more are obtained without sagging or curtaining, with a single Hot Spray application.

How to FINISH FREIGHT CARS DOUBLE-QUICK...with "2-in-1" Hot Spray!

Get Two-Coat Protection in One Application!

Here's the way to apply paint to freight cars—thicker, quicker. The Sherwin-Williams Hot Spray system applies twice as much finish coat material in a single application . . . reduces painting costs even more because less material is needed, less wasted in overspray.

This new system nearly doubles shop capacity. It does away with drying time between coats . . . gets cars back in service faster. In addition, it provides longer-lasting good appearance and protection through more uniform application, better adhesion and higher gloss. And it eliminates most variables caused by temperature and weather.

Hot Spray finishing for freight cars, with Sherwin-Williams Hot Spray Synthetic Freight Car Enamels, has been thoroughly field-tested in railway service by leading railways.

S-W Hot Spray Finishes are part of a complete line of S-W finishes specifically engineered for railway service. Write for new S-W Hot Spray Brochure B-760. The Sherwin-Williams Co., Transportation Division, Cleveland 1, Ohio.

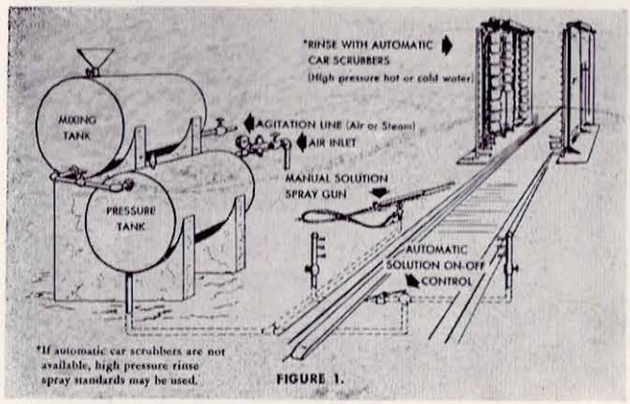
Cold weather application of Sherwin-Williams Hot Spray Freight Car Enamel. Inspection showed excellent coverage, uniformity and gloss in spite of 24-32°F. weather and outdoor location.

SHERWIN-WILLIAMS

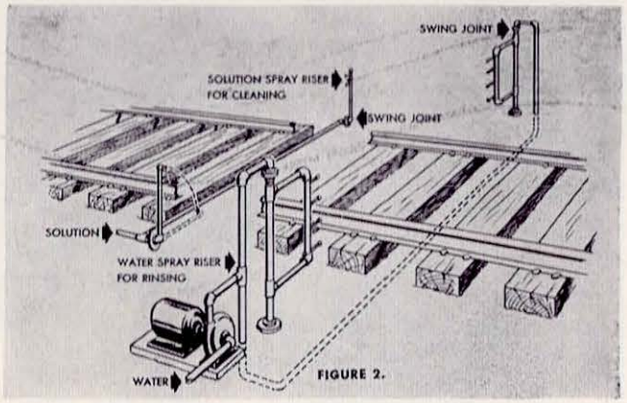
RAILWAY FINISHES

A cost-cutting, easy way

to clean underframes and running gear


*RINSE WITH AUTOMATIC CAR SCRUBBERS (High pressure hot or cold water)
MIXING TANK
AGITATION LINE (Air or Steam)
AIR INLET
PRESSURE TANK
MANUAL SOLUTION SPRAY GUN
AUTOMATIC SOLUTION ON-OFF CONTROL
*If automatic car scrubbers are not available, high pressure rinse spray standards may be used.
FIGURE 1.

Method for cleaning diesel trucks, underframes, fuel tanks, etc. Equipment includes solution tank; pressure tank; spray risers.



Method for cleaning and rinsing undersides of trucks and cars. Idle spray risers may be swung away to maintain track clearance.

MECHANIZED Oakite Cleaning and rinsing methods speed up inspection and repair of diesel power and passenger car trucks

Here are two widely-used mechanized methods that make cleaning of underframes and running gear a highly economical operation. They assure thorough cleaning and rinsing of hard-to-get-at areas. They provide a golden opportunity to save time and money.

Figure 1 shows schematically how the Oakite mechanized method removes road grime, crater's compound, hub liner grease, etc. Detergent solution is applied under air pressure through fixed solution risers. Diesel locomotive slowly passes through cleaning solution sprays. After short soaking, locomotive passes through rinse zone.

Figure 2 shows alternate method of rinsing underframes and running gear, utilizing fixed track-side wash risers.

Freely available to all Mechanical Department Supervisors are diagrams and data on fabricating and installing either of these two Oakite Mechanized cleaning methods. Contact your local Oakite Railway Technical Service Representative or write to Oakite Products, Inc., 46 Rector Street, New York 6, New York.

In Canada: Oakite Products of Canada, Ltd. 65 Front St. East, Toronto, Ont.

OAKITE RAILWAY SERVICE DIVISION

THIS IS THE MARK

of Quality and Dependability

On all COMMONWEALTH One-Piece Cast Steel Devices this shield is recognized by railroad men everywhere as the trade-mark of General Steel Castings Corporation symbolizing the quality, dependability and economy built into its products.

The many advantages inherent in sound design and reliable workmanship of COMMONWEALTH Products greatly increase the life of railway equipment, materially lower upkeep and operating costs, and contribute largely to safety of operation.

Possessing years of specialized experience, capable staffs of engineering, production and service specialists are available to advise and assist customers with equipment problems.

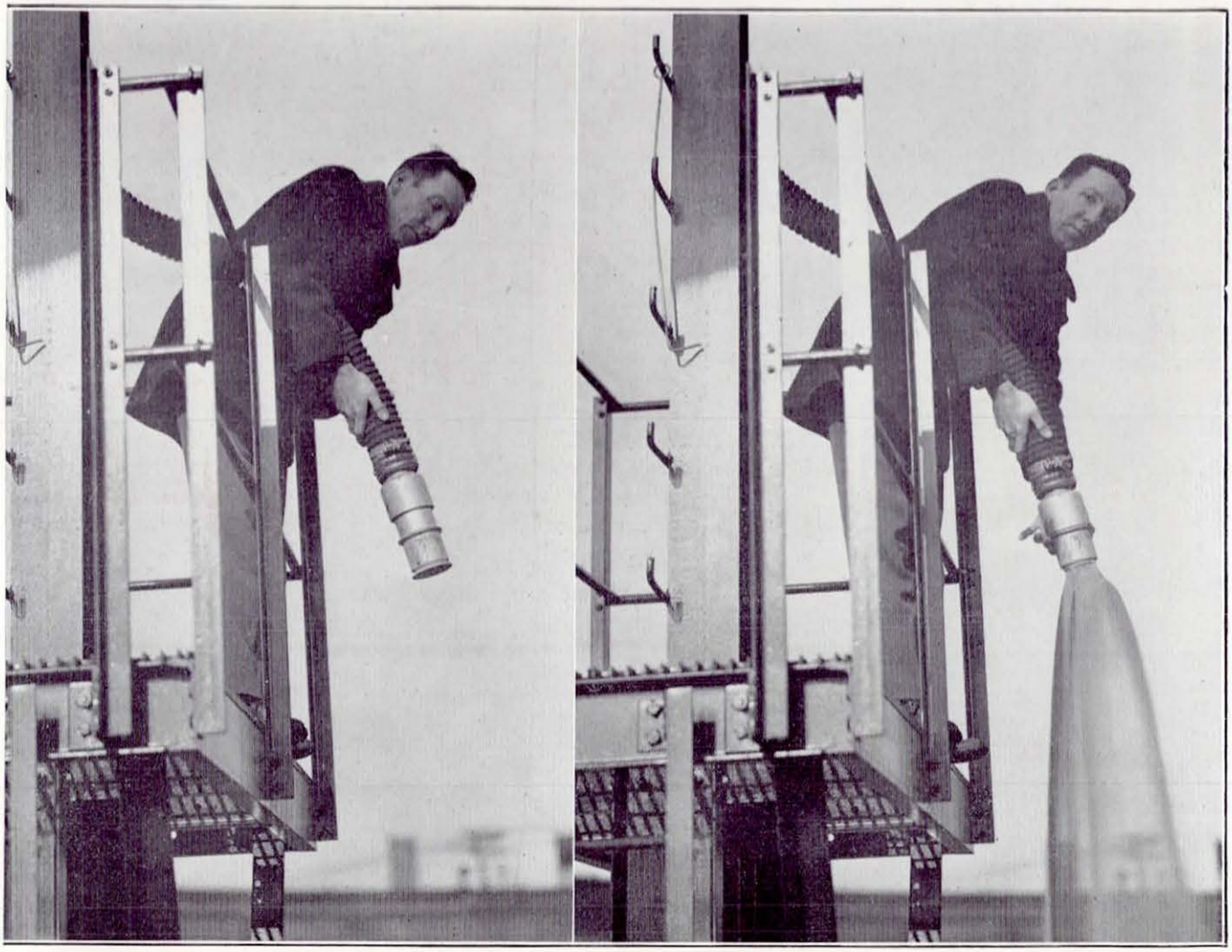
SPECIFY COMMONWEALTH PRODUCTS.

GENERAL STEEL CASTINGS

GRANITE CITY, ILL. EDDYSTONE, PA.

"B and M" ENCASED No. 4 DIESEL SAND LOADING VALVE.

3" DIAMETER—FAST LOADING—TWICE THE CAPACITY OF A 2" VALVE, WATER-PROOF.



The "B&M" encased sand valve was invented some years ago by a Master Mechanic of one of the Eastern railroads. We have taken it over on a royalty basis and we believe it to be the best Diesel sand valve available to the railroads. The above photograph shows the valve closed and the sand has a continuous encasement from the hose to the discharge end of the valve.

The operator merely has to put the valve into the side sand box of a Diesel road locomotive where the small ring projection on the valve contacts the bottom edge of the sand box. When he pushes down on the hose the valve thus opens discharging sand until the box is filled and the sand comes to rest. A number of boxes may thus be filled at the same period. He then merely pulls out the hose and the sliding encasement on the valve drops of its own weight, cuts off the sand flow, closes the valve without him having to touch the valve by hand.

When a top vertical box on a switcher locomotive is being sanded, the operator may pull up the encasement portion with his hand as shown and thus get a fast loading of sand. There are no levers, welded straps, bolts, lever locks or other features to get out of alignment and out of order. Our "B&M" valve fits on a 3" or 2½" inside diameter sand hose as directed. Hundreds in daily use. The price is sufficiently low so that you can afford to place open orders for any of your requirements. Prompt shipments.

ROSS AND WHITE COMPANY CLYDE P. ROSS, *President* DAVID E. WHITE, *Vice President*

CHICAGO DAILY NEWS BUILDING, CHICAGO CARLETON P. ROSS, *Contracting Engineer*

New PYLE Composite Control Jumpers for Diesels

16 - 21 - 24 or 27 Poles

Individually renewable conductors pulled through hollow sheath at time of assembly. Two spare conductors included.

NOW! All the desirable features of rubber and metal combined!

Avoids costly replacements

Pyle-National's new WWPAJ Diesel Locomotive Control Jumper **combines the flexibility and resiliency of the all-rubber head jumper with the lightweight, strength and individual parts renewability of the all-metal head jumper.**

Rubber, of a compound unaffected by oil, heat and cold and possessing high arc resistance, provides: A resilient shock-absorbing face plate which withstands the most severe blows without cracking or becoming out-of-round.

A super-flexible, fabric-reinforced rubber conduit with long tapered integrally molded grommets on each end which encloses the individual conductors.

Resilient rubber sleeves which prevent abrupt flexing of leads and avoid current creepage at the wire terminals without the use of sealing compound.

Aluminum Alloy plug housing, lock cap and lock nut, in addition to reinforcing the assembly, makes complete dismantling possible for inspection, repair and replacements.

All strain is confined to the exterior components including the rubber conduit, tapered grommets and metal plug housings. No strain is imposed on the interior current carrying conductors and contacts.

Metal plug housing also includes an integral damage-proof polarizing guide lug and a positive locking seat for the receptacle cover hook.

THE PYLE-NATIONAL COMPANY

1356 NORTH KOSTNER AVENUE • CHICAGO 51, ILLINOIS

BRANCH OFFICES and AGENTS in the Principal Cities of the United States and Canada. EXPORT DEPARTMENT: International Railways Supply Company, 30 Church St., New York. CANADIAN AGENT: The Holden Company, Ltd., Montreal.

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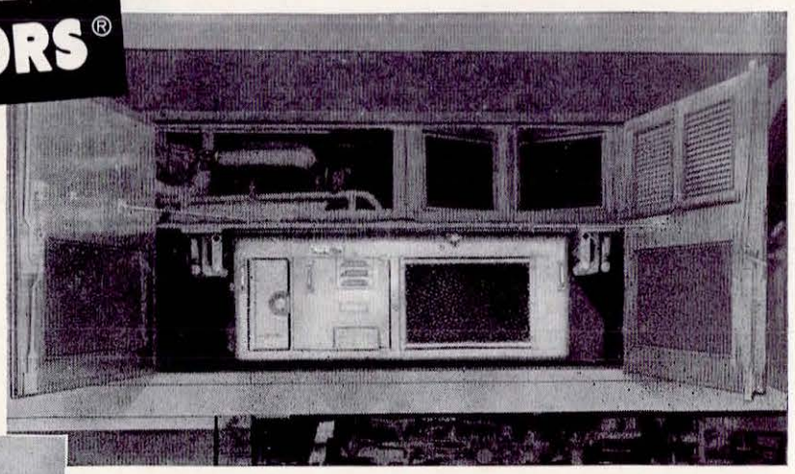
TWIN ENGINATORS

Supply ALL Electric Energy for MILWAUKEE'S

SUPER DOME CARS

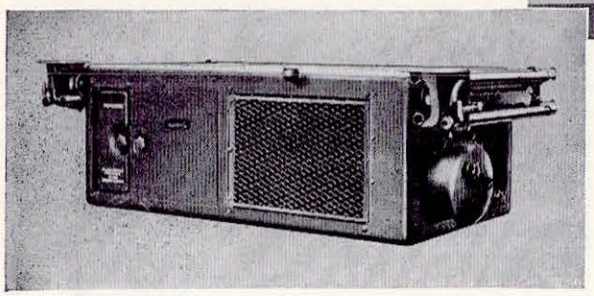
WAUKESHA Diesel ENGINATORS®



Open compartment doors show one of the twin Enginators in operating position.

★

Waukesha 27 KW DC Enginator unit with mounting tracks.



• In these newest cars—designed and built by Pullman-Standard—energy for *all* electric services including air conditioning, illumination, and cooking, is supplied directly and exclusively by two 27 KW, 32-volt DC Diesel Enginators.

Send for Bulletin 1615.

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RAILWAY DIVISION WAUKESHA MOTOR COMPANY WAUKESHA, WIS.

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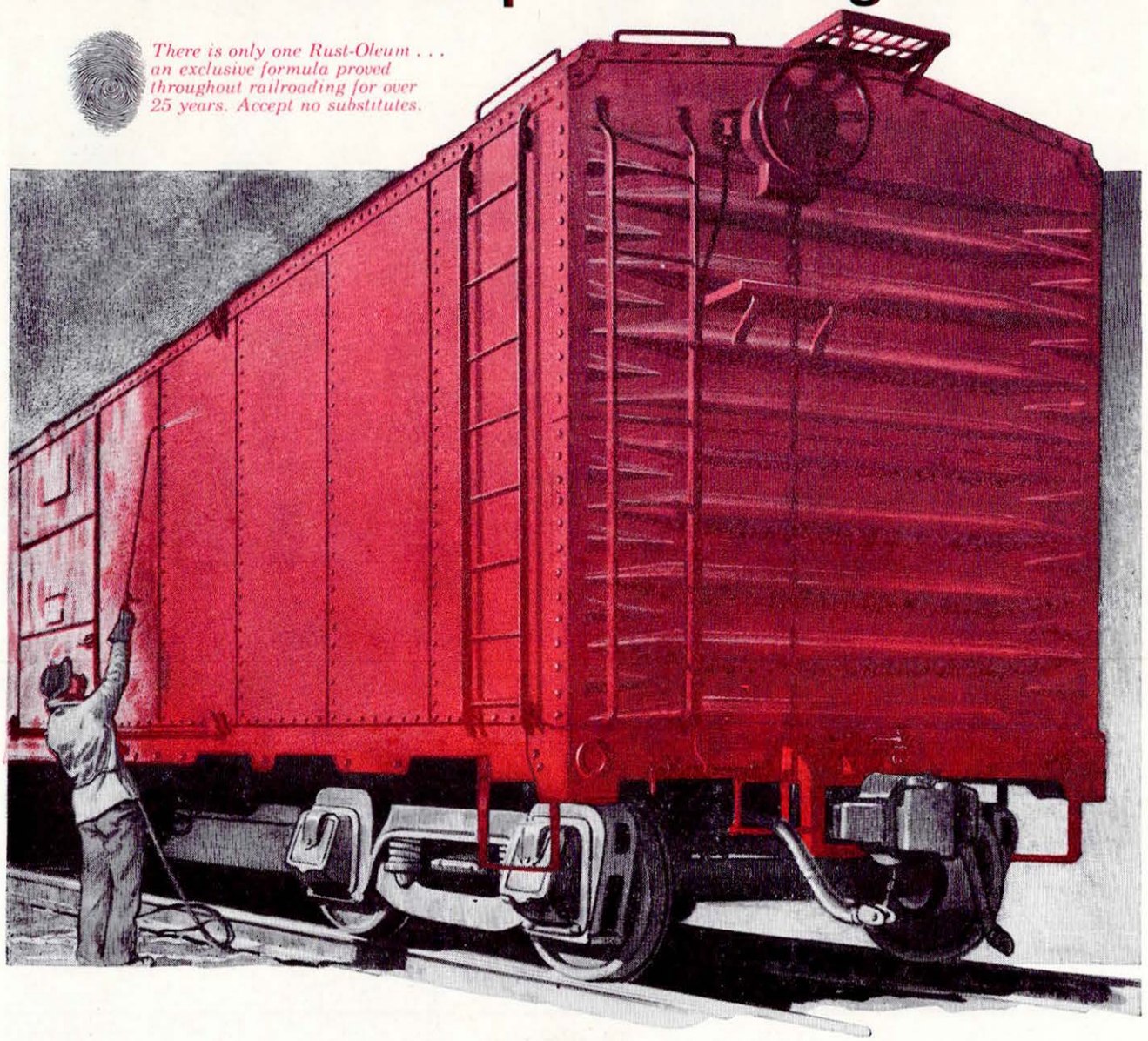
RUST-OLEUM keeps 'em looking like this!

There is only one Rust-Oleum . . . an exclusive formula proved throughout railroading for over 25 years. Accept no substitutes.



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Write for your copy of the new Rust-Oleum Catalog, *today!* Available in many colors, aluminum, and white.

KLASING

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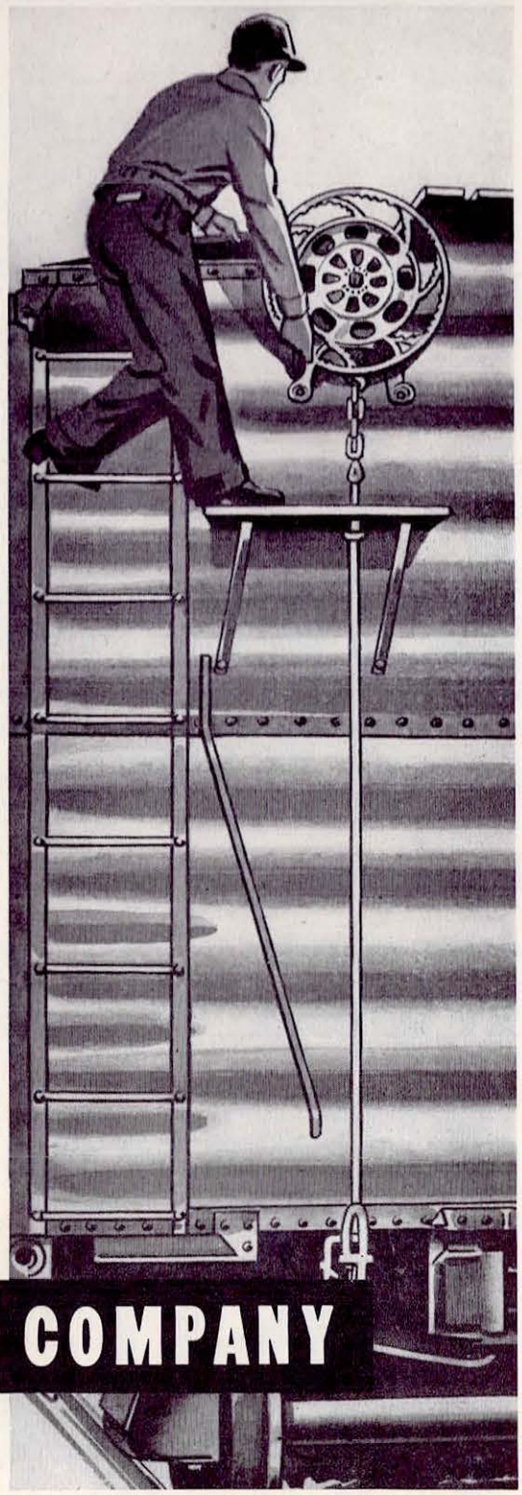

• **Non-spin "easy grip" hand wheel** for operator's safety and convenience • **Fully controlled graduated release** by turning wheel counter-clockwise • **Quick take-up** for instant braking and positive control • **Easily released** under any power • **Operated completely with hand wheel,** no levers or gadgets for release • **Easily inspected—maintained,** all internal parts may be removed from the brake without removing housing from car • The speed, power and convenience of operation makes the POWERMATIC the most practical hand brake yet developed for manual control of freight cars.

Klasing's new Automatic Mechanical SLACK ADJUSTER is now available . . . Write for detailed information.

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KLASING HAND BRAKE COMPANY

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You'll get more pay hours from your freight cars with Pittsburgh's Remarkable *Hot-Spray* CARHIDE

Provides twice as much paint with one application . . . Puts cars into service more quickly . . . Keeps them looking better longer

HOT-SPRAY CARHIDE—latest development in Pittsburgh's famous line of finishes for freight rolling stock—brings important savings in time and labor to shop, traffic and operating departments.

One coat of Hot-Spray CARHIDE is equal to two coats applied cold.

● **In Hot-Spray CARHIDE,** heat is used in place of conventional thinner to adjust viscosity to weather and temperature conditions. In all seasons of the year, it goes on more uniformly, has better adhesion, dries quickly to a higher gloss, is more durable, and retains its initial appearance for a longer time.

● **Hot-Spray CARHIDE** can be applied with approximately half the usual air pressure. This lessens the amount of "fog" in the paint shop—more of the solid material reaches the surface being painted. More paint is applied with less labor. As there is much less thinner to evaporate from the paint, imperfections from shrinkage are greatly reduced.

● **Refinishing is speeded** as half the time needed to apply two coats, as well as drying time between coats, is eliminated. Shop capacity is practically doubled without increasing space, manpower or equipment.

● **We'll be glad** to give you further information about this new kind of freight car paint. A wire, telephone call or letter from you may save time and money.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

Pittsburgh Railway Finishes For Every Need

CARHIDE—for wood and metal freight cars of all types.
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PITTSBURGH PAINTS

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PITTSBURGH PLATE GLASS COMPANY

Whose cheese is being divided?

TWO cats could not agree on fair division of a tasty cheese. "Let's go to the monkey," said one, "He is all-wise and can divide our cheese fairly." So to the monkey they went.

The monkey immediately broke the cheese evenly and judicially put the two pieces on the pans of his balance. But one was slightly heavier. He shrewdly nibbled that piece a bit and put it back on the scales. Now it was the lighter piece. So he bit off some of the other piece only to find it the lighter. Thus while the two hungry cats watched, the monkey kept taking bites of the cheese, first one piece, then the other, until finally the cheese had almost disappeared.

"What's left is too small to divide," sagely pronounced the monkey, as he popped the remaining fragments into his mouth.

Observers of the American scene see a direct parallel between the record of federal taxation and this ancient parable of the trusting cats, the greedy monkey and the cheese. Business and the individual citizen have been content to trust government to rule on the disposition of their earnings. And Uncle Sam keeps taking bite after bite out of the shares of both individual citizen and business.

Already government bites are so large as to severely penalize citizens and business alike. If allowed to continue, it will seriously impede further industrial progress and growth, stifle initiative and threaten the strength of our free enterprise system. Beware the day—goal of the socialists among us—when the monkey says, "What's left is too small to divide."

QUALITY YOUNGSTOWN SERVICE

The Youngstown Sheet and Tube Company

General Offices--Youngstown 1, Ohio

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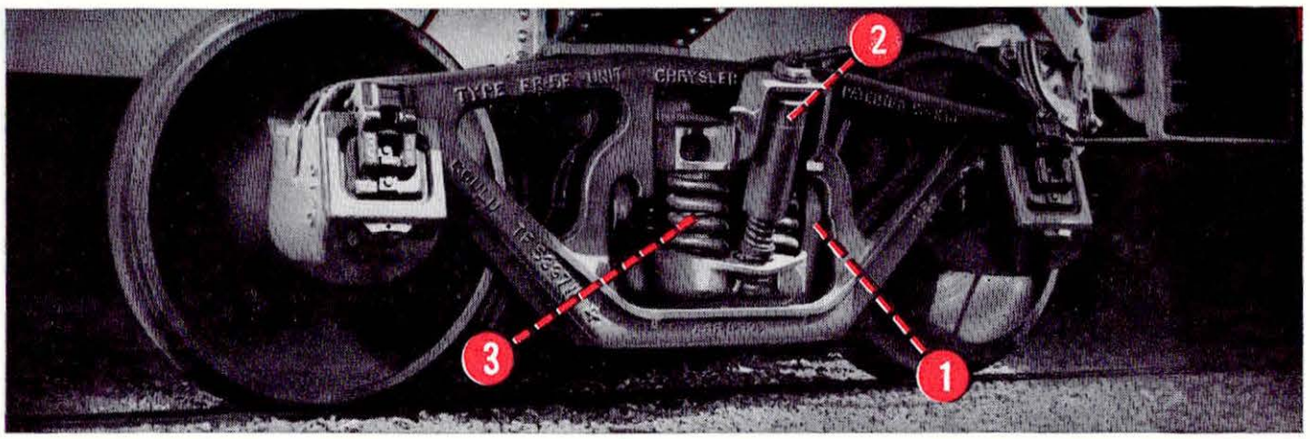
MANUFACTURERS OF CARBON ALLOY AND YOLOY STEELS

RAILROAD TRACK SPIKES - CONDUIT - HOT AND COLD FINISHED CARBON AND ALLOY BARS - PIPE AND TUBULAR PRODUCTS - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - RODS - SHEETS - PLATES.

Selected to carry AMMUNITION *for U. S. Navy*



THIS IS BALANCED SUSPENSION. (1) U-shaped, pendulum-type hangers permit shock-absorbing lateral motion. (2) Chrysler Design self-contained, constant friction snubbers work with (3) the longest travel standard coil springs to absorb vertical shocks and control spring oscillation.

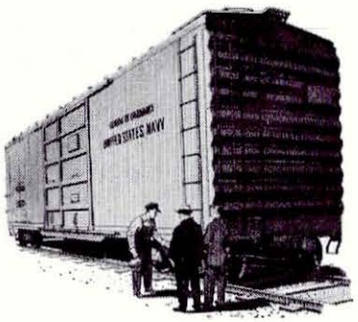
Chrysler Design RAILROAD FREIGHT TRUCKS

offer *better protection* to all goods in rail transit

Already in wide use by railroads and shippers, now Chrysler Design Freight Car Trucks have been specified by the U. S. Navy for the delicate job of carrying ammunition and explosives.

Chrysler Design trucks are constructed on a completely new application of the fundamental principles of *Balanced Suspension*. They show reductions of 98% in vertical shock index and 95% in lateral shock index (AAR formula), as compared with standard trucks having coil-snubber spring groups. Users report they virtually eliminate rail-originated damage to lading. Low maintenance costs have been proven in a combined total of over 40 million car miles of accelerated freight and head-end service.

These advantages are finding profitable use in such developments as the new General American-Evans' Damage-Free Box Car, where Chrysler Design trucks are standard equipment . . . as well as in all other types of railroad freight and head-end passenger train service. To railroads and shippers, they offer the prospect of a new day of faster, more economical rail freight.



One of 880 U. S. Navy ammunition cars equipped with Chrysler Design trucks and built by Pullman-Standard, Chicago

This development of Chrysler Design Railroad Freight Trucks is a natural outgrowth of Chrysler research on the fundamentals of vehicle suspension. Such work is part of Chrysler Corporation's continuous research into every phase of vehicle design. The value of this same research is reflected in the superior riding qualities of Chrysler-built cars and trucks.

Chrysler Design Railroad Freight Car Trucks are manufactured and sold by The Symington-Gould Corporation, Depew, N. Y., under Chrysler license. Chrysler Design Friction Snubbers are manufactured and sold under Chrysler license by the Houdaille-Hershey Corporation, Detroit 2, Mich.

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DOW

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new Valparaiso bridge protected against termites and decay—service life doubled

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Please send me: _____ Plant wood treating specifications.
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The above bridge spans the Grand Trunk right-of-way in Valparaiso, Indiana. All wood in this bridge was pressure treated with PENTA for positive protection against termites and decay. PENTA will keep the large timbers strong—actually make them last 2 to 4 times longer. Maintenance will be less on this bridge, too, because PENTA protection is permanent. Construction problems were simplified since the PENTA treated wood was clean and easy to handle. Valparaiso can look forward to many years of reliable, trouble-free service from this PENTA-protected bridge.

Specify PENTA protection for all car lumber, platforms, buildings, ties and poles. Write Dow TODAY for information about *PENTAchlorophenol. THE DOW CHEMICAL COMPANY, Midland, Michigan.

you can depend on DOW CHEMICALS

DOW

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. . . and nothing specializes on <u>your</u> business like your business paper

Here's a smart business man. He spends his time where every sitzmark parks a prospect at his feet. It's simple sense: He *specializes* . . . and it *pays*!

Your business is specialized, too . . . and so is your business paper. The time you spend with it pays . . . for its editors are experts in your specialty. They scout the field . . . report what's good that's new . . . find ideas that worked . . . suggest methods to keep you a leap ahead of competition.

The ad pages are as specialized as the editing. They, too, tend strictly to business . . . your business. They bring you data on new products, new materials . . . gather in one place a raft of ideas on where-to-buy-what, or how to make (or save) a dollar.

That's help you can't find concentrated into such quick reading time *anywhere* else! It's help that puts many a man out front in his field, as a specialist who knows what's what today . . . sees what's coming tomorrow. It's simple sense to read every page, every issue.

This business paper in your hand has a plus for you, because it's a member of the Associated Business Publications. It's a paid circulation paper that must earn its readership by its quality . . . And it's one of a leadership group of business papers that work together to add new values, new usefulness, new ways to make the time you give to your business paper still more profitable time.

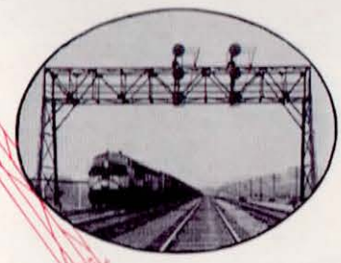
Railway Age is the *weekly* business paper of the railway industry . . . the publication which covers *all important developments* from the executive and managerial standpoint. It covers the news . . . reports departmental developments . . . covers traffic, operation and financial activity. It is the specialized publication with the *business* and management point-of-view. It's a *paid* audited circulation publication . . . a member of the A.B.C. and A. B. P.

RAILWAY AGE

One of a series of advertisements prepared by THE ASSOCIATED BUSINESS PUBLICATIONS

THESE G-R-S SYSTEMS

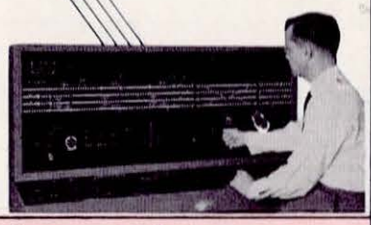
CAN CUT YOUR OPERATING COSTS IN '53



G-R-S

Syncrostep

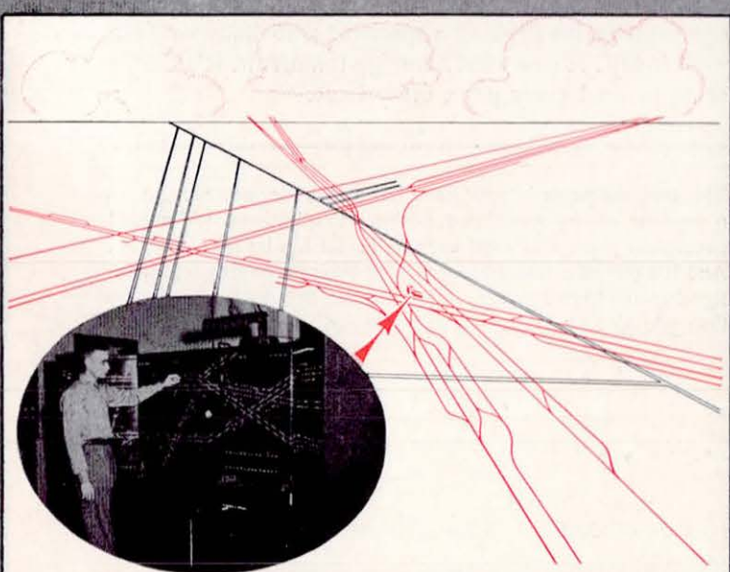
REMOTE CONTROL



enables you to consolidate control of remote layouts in one tower; simple and economical.

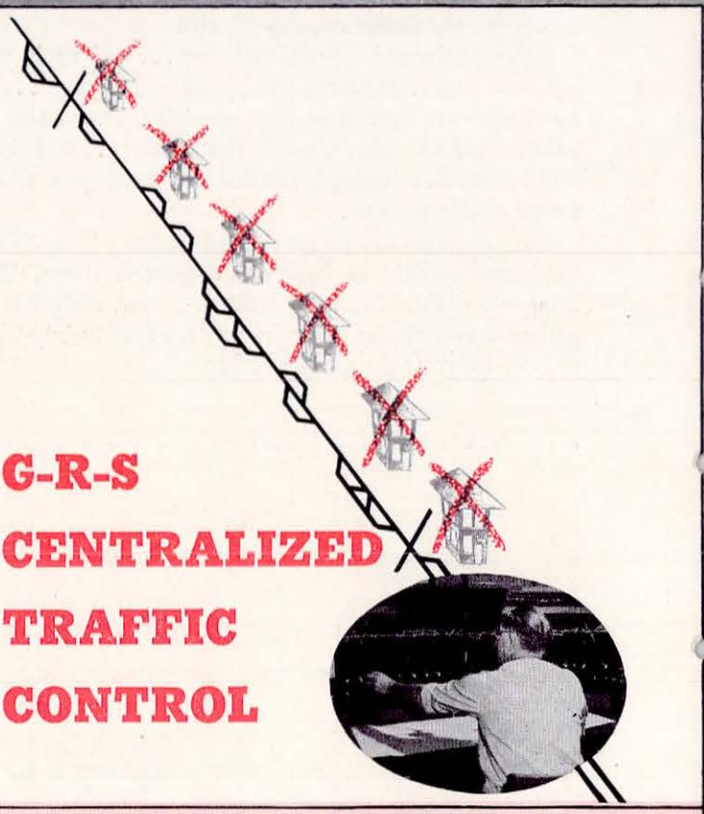
G-R-S AUTOMATIC BLOCK SIGNALING

cuts running time; provides fully automatic protection; is the basis for future cTc.



G-R-S NX (eNtrance-eXit) ELECTRIC INTERLOCKING

simplifies train routing; enables one operator to handle large layouts with ease.



G-R-S CENTRALIZED TRAFFIC CONTROL

for greater use of motive power; eliminates train orders; increases gross ton-miles per train-hour.

GENERAL RAILWAY SIGNAL COMPANY

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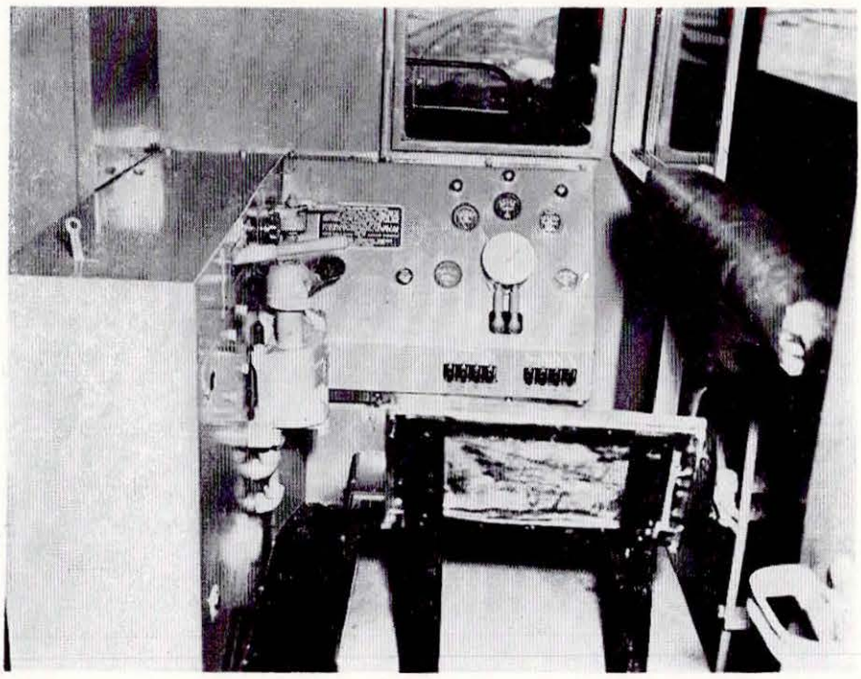
A-2619



Locomotive Safety Hatch

In order to provide maximum safety for the operator, in hazardous right-of-way operations, an escape hatch was built into eight diesel-hydraulic locomotives from the shops of the Baldwin-Lima-Hamilton Corporation, Philadelphhia 42, Pa. These units move limestone from quarry to a preparation plant. As the track bed is constantly moved, it is never in one spot long enough to warrant the expense of perfect leveling. This track lies near the quarry working face and a derailment can send the locomotive into the pit below. The emergency hatch, facing the land side of the right-of-way, will aid the operator to escape in case of accident.

ZA-80 and XA-60 are the two latest models in the line of fork trucks produced by the Hyster Company, Portland 8, Ore. The ZA-80 has a capacity of 8,000 lb. and is equipped with pneumatic tires. It is designed to operate outdoors but the manufacturer states that it can be used indoors efficiently, too. The XA-60 is a smaller version.

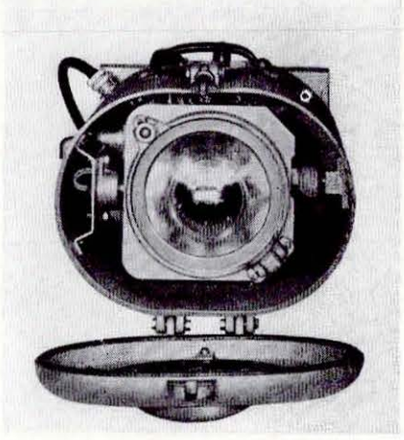
Industrial Warning Signals

The Pyle-National Company, Chicago 51, has announced three models of its Gyralite moving-beam warning lights.

The lights project a high intensity colored or clear beam which rotates with a wide, sweeping action.

The unit illustrated is a Type 1740 Gyralite with a single PAR-46 sealed beam lamp mounted in gyrating mechanism within a cast aluminum alloy housing. Type 17340 is equipped with two type PAR-46 sealed beam lamps, one mounted in gyrating mechanism, the other mounted in the body as a stationary clear light for use as a headlight or back-up light on moving equipment. Type 15100 has a stationary lamp and rotating reflector for low voltage duty.

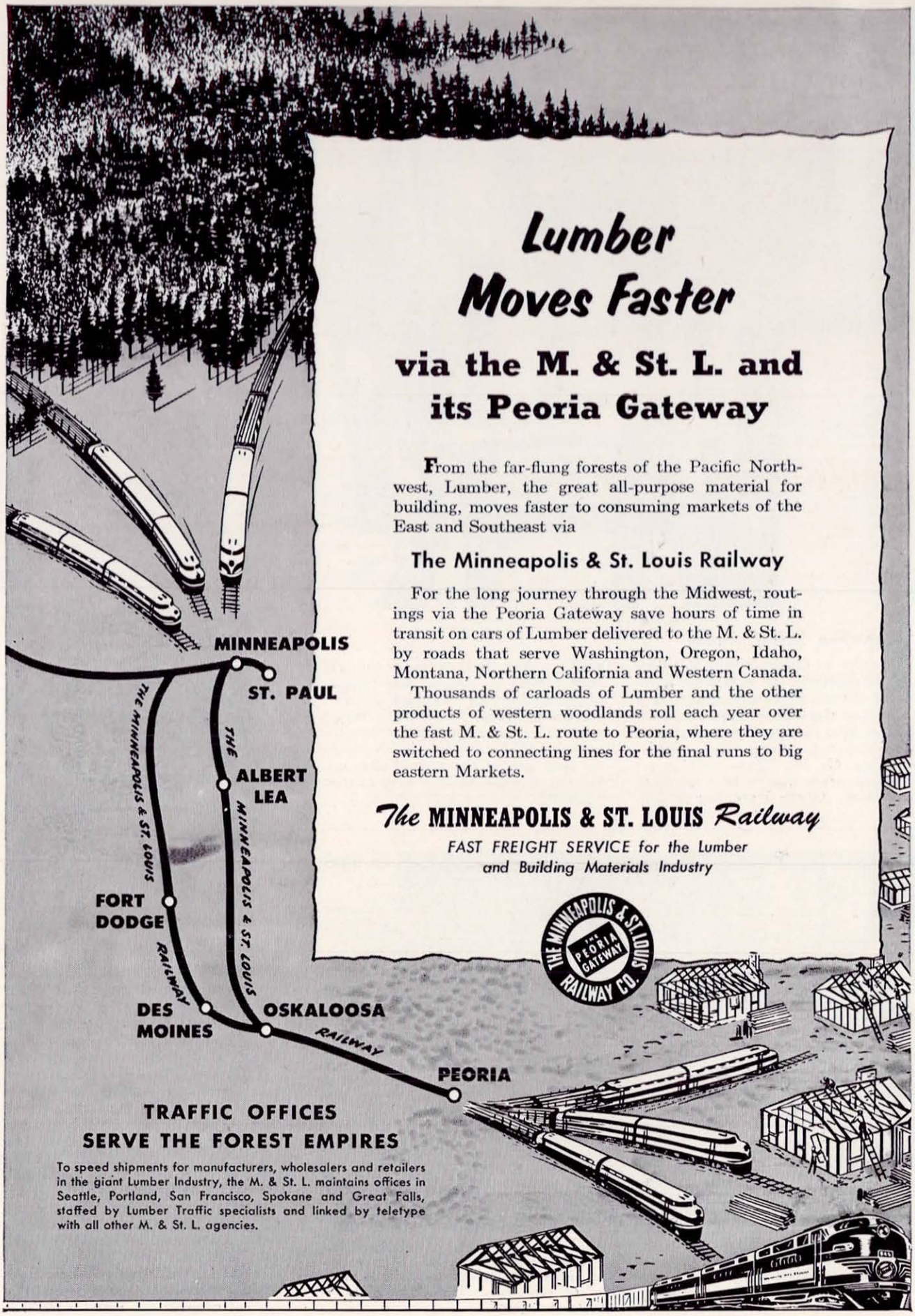
These visual warning signals have advantages over horns, sirens and bells



in areas where the noise level is already high or where confusion might result were another sound signal to be added.

The manufacturer states that when a Gyralite beam is sighted, the eye follows it to its source, thus pinpointing the safety hazard.

Some of the applications for the Gyralites are on overhead cranes or other hazardous moving equipment such as scale cars, transfer cars and other vehicles where they warn workers on or near the craneways or roadways of approaching danger. Portable Gyralites may be aimed on the ground pointing upward at crane operators to warn construction or repair crews working on the craneway. They are also used at hazardous doorways, crosswalks, open pits and manholes and for call signals in large field operations when distance is beyond the range of conventional sound signals.



Lumber Moves Faster

via the M. & St. L. and its Peoria Gateway

From the far-flung forests of the Pacific Northwest, Lumber, the great all-purpose material for building, moves faster to consuming markets of the East and Southeast via

The Minneapolis & St. Louis Railway

For the long journey through the Midwest, routings via the Peoria Gateway save hours of time in transit on cars of Lumber delivered to the M. & St. L. by roads that serve Washington, Oregon, Idaho, Montana, Northern California and Western Canada.

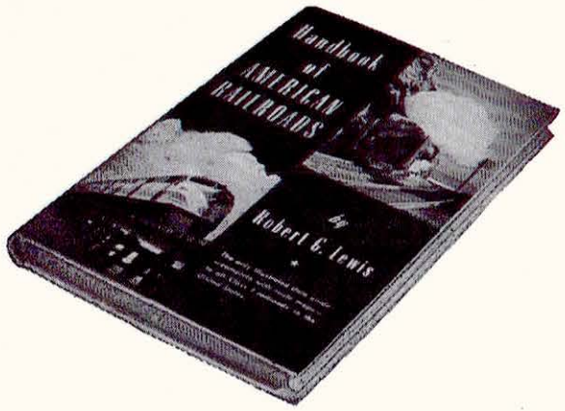
Thousands of carloads of Lumber and the other products of western woodlands roll each year over the fast M. & St. L. route to Peoria, where they are switched to connecting lines for the final runs to big eastern Markets.

The MINNEAPOLIS & ST. LOUIS Railway

FAST FREIGHT SERVICE for the Lumber and Building Materials Industry

TRAFFIC OFFICES SERVE THE FOREST EMPIRES

To speed shipments for manufacturers, wholesalers and retailers in the giant Lumber Industry, the M. & St. L. maintains offices in Seattle, Portland, San Francisco, Spokane and Great Falls, staffed by Lumber Traffic specialists and linked by teletype with all other M. & St. L. agencies.



Official Facts, Figures, Photos and Maps of Every Class I Railroad in the U. S.

HANDBOOK
of
AMERICAN RAILROADS

by ROBERT G. LEWIS

Transportation Editor, *Railway Age*

How many diesels has the Chicago, Burlington & Quincy? . . . When was the Gulf, Mobile & Ohio started? . . . Who is president of the St. Louis-San Francisco? *Handbook of American Railroads* supplies you with these and tens of thousands of other answers.

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8. Many Other Highly interesting Statistics Collected Here for the First Time

Now you can get—for the first time under one cover—official up-to-date facts on 127 Class I railroads. Specially-drawn maps show the route of each road. Beautiful action photos of crack trains such as Twin Cities Zephyr, The Red River, The Inter-City Limited, and dozens more fill the book.

This means convenience for the railroad executive, fun for the railfan, and—for everyone concerned with railroads—a tremendous gain in railroad knowledge that only a vast accumulation of facts like this makes possible.

265 p. 5½ x 8½ 375 ill. board $2.95

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30 Church St., New York 7, N. Y.

Please send me for Free examination a copy of the HANDBOOK OF AMERICAN RAILROADS. If after 10 days I am not completely satisfied, I will return the book and owe nothing. Otherwise, I will remit the price of $2.95 plus a few cents for postage and handling.

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Benchmarks and Yardsticks

THE LACK OF ADEQUATE TEXTBOOKS descriptive of the principal railway operations—discussed in this space on December 15—has brought forth quite a response from readers.

J. C. McLarn of Charlotte, N.C., believes that fictionalized instruction would be more effective than straight textbooks, and he cites the popular Walt Wyre series of stories published some time back in our sister publication *Railway Mechanical and Electrical Engineer* (now renamed *Railway Locomotives and Cars*).

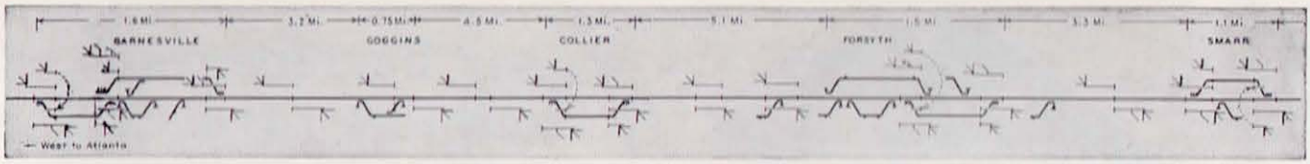
Paul R. Brustman of Buffalo, N.Y., reminds us of the two excellent books by John Droege—"Freight Terminals and Trains" and "Passenger Terminals and Trains"—which, Mr. Brustman believes, if revised to include modern practice, would still make excellent texts. No doubt about it, they would.

James L. Lee of Galveston, Tex., wonders whether graduate students of business administration wouldn't make good authors for the kind of textbooks we're talking about. These young fellows could probably do well at organizing the material and the actual writing, but we'd suspect they'd have to be attached to people of long and thoughtful experience in managerial positions, to get the information which should be incorporated into books like these. No young man, however brilliant, could expect unaided to match the performance of Wellington or Loree in their classic works.

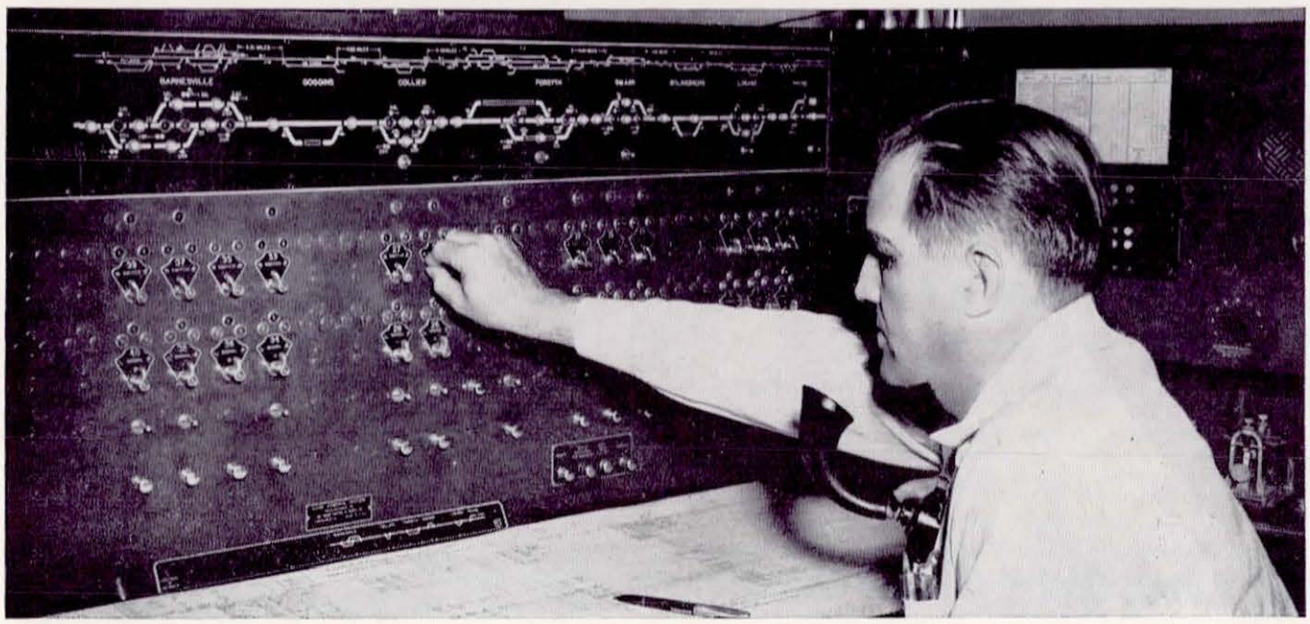
Mr. Lee makes the further point that, if acceptable textbooks were available, a lot of urban universities which have evening sessions would probably be quick to offer courses of instruction for railroad employees—which they're not equipped to do now.

Your reporter certainly has no prejudices against fictionalized instruction, as Mr. McLarn proposes, any more than he has against historical fiction. However, with historical novels, the first job to be done is to get the history straight—the fiction-writing is the second step. As far as standard railroad textbooks are concerned, the more popularization that could be given such instruction the better, but it's going to be pretty hard to write fiction for purposes of instruction in standard practices until these practices themselves have first been clearly specified by authoritative practitioners.

Somewhere there are railroad men who really know and can be articulate about the operating department, or car or locomotive work, or accounting, or effective rate-making. The need is to find means to get competent writing men attached as assistants to such potential authors. J. G. L.



CENTRAL of GEORGIA's expanding C.T.C. system powered through OKONITE-OKOPRENE cables



42 miles of single track are controlled from Terminal Station in Macon, Georgia. Okonite-Okoprene insulated wires and cables are in use throughout.

CENTRAL OF GEORGIA has completed 42 of a proposed 102 miles of modern C.T.C. over single track line between Macon and Atlanta. As so many Class I railroads are doing, Central of Georgia specified Okonite-Okoprene cable for line drop wires, tower and case wiring, and signal wiring.

Fewer sidings, with a consequent reduction in maintenance, were one reason for Central's adoption of a C.T.C. system. And greater circuit security with practically no maintenance is assured Central of Georgia with Okonite-Okoprene wires and cables.

Centralized control of train movements requires absolute dependability throughout the whole system. Okonite-Okoprene cables are so frequently specified because they have a degree of dependability and long service life unequalled by other cables. The Okonite insulation and Okoprene sheath provide an extremely stable dielectric and a tough, oil-, heat-, and moisture-resisting covering—a safe combination that railroad men have placed their confidence in for many years. The Okonite Company, Passaic, N. J.

The best cable is your best policy

OKONITE SINCE 1878 *insulated wires and cables*

1398

HOW RIGHT IS THE TICKER TAPE?

What other industry ever had such completely contradictory trends governing it as the railroads have today? By carefully selecting one's facts, it is possible to be either deeply gloomy or highly optimistic about the railroads' prospects. The realist will be neither. He will face all the facts, especially the somber ones, and do his best to correct them—while taking full advantage of the cheerful trends to win recruits and munitions for his battle against unhealthy conditions. Certainly nobody around the railroads is going to repeat the mistake of a lot of people in the early forties, and assume, just because the country has a war on its hands, that the railroads no longer have any problems to worry about.

"It's never smart to fight the tape" is an old adage of the stock market which the magazine Business Week brought to mind in a recent appraisal of the current securities boom. The magazine reviewed all of the important up-trends in the price of railroad stocks since 1900. It developed that the "bull market" in railroad shares which started in June 1949 has shown a bigger gain in price than any previous market cycle, except one. In the 182 weeks from June 1949 to mid-December 1952, the Dow-Jones index spiraled from 41 to almost 109, a gain of nearly 68 points in average price and of nearly 166 in percentage rise. The price of railroad stocks has risen higher in points since the start of hostilities in Korea than it did during the whole of World War II—notwithstanding that, in the latter period, the railroads enjoyed unprecedented traffic (especially in passengers) and relative freedom from competition.

The "bullishness" of speculators and investors on railroad securities stems in part from a complex of factors which have little to do with actual railroad prosperity—like "leverage" and the excess profits tax position of the railroads. But, for the most part, it is founded on solid evidences of real improvement in position over the past year, and upon the prospects for 1953.

Last May the railroads got approval for the latest and largest installment of the Ex Parte 175 increase in freight rates. The long and vexatious disagreement with three of the operating brotherhoods was settled, and the Army gave back control of the roads to their owners. Part of the agreement was a "moratorium" on new wage and rules proposals until October 1, 1953. The railroads took delivery of additional high efficiency tools (like diesels) with which to cut unit costs. The result was that the factors of costs, traffic and rates got "in favorable mesh for the first time in many years," according to Dr. Pierre Bretey, one of the country's leading railway security analysts. Wages and rates were stabilized for a time. In addition, the railroads just began to enjoy the *accumulated* benefits of dieselization, roadway rehabilitation and yard modernization. With record high gross revenues, even small reductions in transportation and wage ratios produced an almost magical effect on net earnings.

Heavy Burdens on Heavy Traffic

The balance, of course, is being upset daily with rising material costs, and continued inflation will automatically bring cost-of-living wage increases, while the general rate level remains unchanged. At least one union—the trainmen's—is making an "end run" on the contract moratorium by seeking to force immediate reopening from an important steel carrier, on which a "war of nerves" is intolerable. There also lurks in the offing the maleficent "improvement factor."

Heavy traffic, however, can carry heavy burdens. And traffic looks good for 1953. The Republican victory infused almost unbounded optimism into most businesses —except those which think they can prosper only under easy money—and plans for capital expansion and production contemplate totals, in terms of physical units as well as money, which are the highest on record. Capital goods are prime railroad freight. So are defense ma-

terials, which will flow in quantities at least as great as heretofore, with an administration which pledges itself to wage a more positive struggle against the Communists and which promises to get more solid war material out of tax funds. Even if traffic is no heavier in 1953 than it was last year, revenues will be higher, because the full Ex Parte 175 increase was not in effect during the whole of 1952.

The stock market is taking account of the cumulative savings in operating costs which are being generated from the heavy investments in labor-saving and energy-saving facilities made since the war. The railroads, for example, are about 70 per cent dieselized (to use a rough overall figure).

The next question is: When dieselization has been completed, are there any more technological rabbits in the hat? Robert E. Thomas, manager of railroad investments for one of the largest investment funds in the country, says "yes." Three possible sources of large savings over the next 10 to 15 years, when taken together, may approximate the ultimate total saving from dieselization. He lists them as (1) licking the hot box problem; (2) construction of modern "push-button" yards and terminals, to further reduce labor cost and speed up movement: and (3) more effective utilization of freight cars. And certainly there ought to be some substantial reduction in the passenger deficit.

Dangerous Pollyanna

This optimism about the future of the railroads is heartening. But it can also be dangerous. There are lots of people in the country who want to make it appear that the railroads are "doing okay," because it serves their own interest to overlook threatening negative evidence. For example, there are the competitors who don't like the idea of paying for government-provided transportation facilities or of equal regulation, and government officials who don't relish a modernization of government transport policy, to accord with present-day facts, i.e. replacement of monopoly by competition.

Just last month, in a plea for not giving the railroads the "deregulation" they seek, I.C.C. Commissioner Knudson—who also runs the Defense Transport Administration—declared, "The railroads are not doing so badly under existing laws." He went on to support this optimistic judgment with the statement: "They have the best physical plant in their history; their gross revenues have reached new heights; their stocks and bonds are holding firm, some at high levels. Their net operating revenues are such as to yield at least a modestly fair return on investment." Commissioner Knudson's particulars need looking into.

It is true that the railroads *have* "the best physical plant in their history." Unfortunately, so do their competitors—and new and improved fixed plant for the railroads' rivals is being provided at a much more rapid rate than the railroads can afford to improve theirs.

Now any business which is showing the spectacular gains in basic efficiency that the railroads are showing, with limited tools and funds, and which is, in addition, indispensable, ought, in the country's own selfish interest, to have access to all of the newest tools to which its relative utility entitles it. Have the railroads, in relation to their importance as a carrier and defense arm, been accorded the same right to profits, to new capital or to government monies as has civil aviation, for example? The answer is, of course, "no."

Heavy Investment

The railroads have done the best they could with the only funds available to them these days—net income, and "hire-purchase" money (for equipment only). They spent about $1 1/3 billion last year in capital additions and betterments. The total was off about 5.8 per cent compared with gross capital expenditures in 1951, but was higher than for any other previous year. All expenditures—including materials, supplies and fuel to keep the railroads going, as well as equipment and materials for improvements, were about $2,424,375,000. This was down considerably from 1951—largely in the category of equipment orders. One hindrance to 1952's spending was a greater lack of materials than in previous years, due both to the tragic steel strike and to unrealistic government allocations. In some cases this shortage of essential materials has become almost chronic. During the three-year period ending with 1952, the railroads will have accumulated a loss of about one million tons of new rail, according to the Railroad Industrial Advisory Committee to the National Production Authority. (This "slippage" in production and allocation includes 360,000 tons lost as a result of the steel strike.) The suppliers of rail and the railroads will require two to three years to catch up with a loss of a million tons of so essential a part of the railroads' physical plant.

To get their freight car ownership up to a point considered necessary to avoid car shortages in times of reasonable demand, the railroads have reaffirmed their pledge to boost ownership to not less than 1,850,000 cars by December 31, 1954. This is about 95,000 cars more than the present supply and will have to be attained while retirements of old cars continue at the rate of about 5,000 cars a month. To reach this goal there is needed immediate and continuous allocation of enough steel to build at least 10,000 cars a month. Despite the skillful and vigorous advocacy of Administrator Knudson, car shops and builders, since the start of Korea, have almost never been allocated enough material—at least of the right kind—to support a monthly production approaching this magnitude.

Finding the Cash

An even more formidable check on railroad spending for essentials has been just plain lack of money. The roads' "quick assets" position has deteriorated steadily since the end of World War II—although there was a

slight upward turn during 1952. New money from investors has not been forthcoming, except for equipment obligations. And the level of the latter outstanding has, for many individual companies, become very high, in terms of interest and amortization, compared with depreciation charges.

Net operating income has been the chief contributor of improvement monies. And the railroads' income has not been sufficient to keep them in the physical health their own and country's welfare demands. The 1952 net railway operating income of around $1,050 million was only relatively good. For that net must buy equipment and materials with a constantly rising price trend. Even the most modest of railroad spokesmen say the industry needs an annual N.R.O.I. of $1½ billion to keep it sound financially, with capacity geared to compete for a rising total traffic level, and in position to exploit the latest technological improvements. The railroads, in 1952, were a good 50 per cent short of even that goal.

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Absolute versus Relative

Says Mr. Knudson, "*Their gross revenues have reached new highs.*" That's true. Gross operating revenues of $10,600 million in 1952 were the highest in history. So were the revenues of most, if not all, of the railroads' competitors. Merely having "a high gross" is no measure of health these days. The important point is how much of the gross can be carried down into net return—for it is from net alone that health and strength for the future can come.

The other important aspect of gross is its relation to the income level of the country as a whole. Here, the railroads have been losing ground. Between 1939 and 1951, when the national income rose from $72.5 billion to $277.6 billion, the operating revenues of the railroads declined from 5.58 cents per dollar of national income to 3.79 cents. Since they carried somewhat more ton-miles *per capita* in 1951, this decline in relative share of the country's income was due, in part, to a decline in rates relative to the general price level. To the extent that that decline was the result of greater technological and managerial efficiency, it was good for society and the railroads. To the extent it was due to slow or unrealistic rate decisions and to the artificial ceilings on rates imposed by government subsidies to other agencies of transportation, it was bad for both.

But the other, and more important, part of the decline in the railroads' share of the national "take" has been the constant erosion of their traffic, relative to the country's traffic as a whole.

The "ifs" in the railroads' future are the twin evils of subsidy to rival agencies of transportation and unequal regulation. In this connection, 1952 brought encouraging developments. There emerged specific point-by-point programs for remedial legislation—from the railroads themselves, from the country's leading investors, shippers, and agricultural and business leaders generally. The first is embodied in the "suggestions" which the Eastern Railroad Presidents Conference presented to both political parties before the elections. The second is found in the policy and legislative proposals of the National Industrial Traffic League. The third is contained in the report of the Policy Administration Board of the Transportation Association of America, which, after amendment, is expected to be presented to Congress this year. This last-named report includes all of the points proposed by the railroads, plus several other less modest objectives.

Legislation Is "Pay-Off"

But there remains the larger and more difficult task of actually getting enacted legislation, some or all of which would modernize and equalize the status of the carriers. Although more than 200 transportation bills were introduced in the last session of Congress, and extended hearings were held on many of them, only a few became law. Most of the bills which did become law were adverse to the railroads—e.g., liberalization of railroad retirement, and extension of the agricultural exemption for motor carriers.

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On December 29, a prominent investment analyst gave out a bit of advice. He said that if the necessary legislative program becomes a reality, the securities of most railroads—including the hard-pressed Eastern roads—will rise greatly in value over the long term. If the legislation dies, stick to the already prosperous "bridge lines," he urged.

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for 1951, and 15.3 per cent greater than in 1950. The 1952 average was 59.2 per cent higher than the 1944 wartime peak of $2,727, and more than two and one-quarter times the prewar level of $1,913 in 1940.

The average straight time hourly rate of pay stood at 184.1 cents in 1952. This average was 4.8 per cent above the 1951 level, 17.3 per cent higher than in 1950, 98.0 per cent greater than in 1944, and nearly two and one-half times the 1940 prewar rate.

Quarterly cost-of-living wage adjustments were first made effective for railroad employees in 1951. Average straight time rate and earnings per hour for 1951 and 1952 reflect not only the basic wage increases made effective in 1951, but the cost-of-living allowances in both years as well.

The 1952 cost-of-living (escalation) wage adjustments consisted of an increase of four cents per hour effective January 1, a reduction of one cent per hour on April 1, an increase of two cents per hour on July 1, and an additional two cents on October 1. So, in 1952, the escalation provisions in railroad labor contracts provided for a net wage increase totaling seven cents per hour. The 1951 total cost-of-living allowance was also seven cents, thus producing a cumulative cost-of-living allowance of 14 cents per hour over the two-year period.

Thus, at the end of 1952, the straight time rate per hour for the average railroad employee stood at 186.2 cents. Because of a slight decline in the Consumers' Price Index, leading to a downward adjustment of one cent per hour on January 1, 1953, the hourly rate became 185.2 cents on that date.

Army Control Terminated

At the beginning of 1952, the railroads were still under Army control. Governmental seizure had occurred on August 27, 1950, to avoid a complete stoppage in rail transportation service because of the threat of a nationwide strike by two operating unions. Army control had not yet been terminated on January 1, 1952, since the Engineers, Firemen and Conductors had not accepted wage and rules settlements similar to those made applicable to other classes of employees. Prolonged negotiations with those three unions continued into 1952.

Firemen. On November 6, 1951, the President of the United States created an emergency board (the Daugherty board) to consider the dispute with the Firemen and make recommendations for settlement. The hearings began in Washington on November 27, but the Firemen refused to participate further than to make an opening statement to the board. However, the railroads presented their case to the board and hearings were concluded on December 17, 1951. The board reported on January 25, 1952, its recommendations following the lines of the applicable portions of the Trainmen's and Non-operating Employees' agreements consummated in 1951. The railroads accepted the board's report on February 5, and the Firemen rejected it on February 11.

Engineers. During the course of the hearings on the dispute with the Firemen, negotiations were actively continued with the Engineers. On December 19, 1951, the Engineers renewed their request for appointment of an emergency board, but the board was not created, and on January 15, 1952, the Engineers withdrew their request.

Conductors. On December 7, 1951, the Conductors requested the secretary of the army to enter into an arbitration agreement to settle their dispute. On January 10, 1952, the Conductors wrote the army seeking an interim wage increase equal to those effected by agreements with other groups. The army declined to accede to this request.

Engineers, Firemen and Conductors. On March 9, 1952, the three organizations called a strike on New York Central lines west of Buffalo and on the Terminal Railroad Association of St. Louis. A temporary restraining order was obtained by the army and by March 12, nearly all the workers were back on their jobs. Although the organizations vigorously opposed it, a preliminary injunction against the strike was issued on April 23, and their appeal to the U. S. Appeals Court was lost on May 9. An appeal to the Supreme Court of the United States for a stay of the preliminary injunction was likewise lost on May 10.

Presidential Assistant John R. Steelman again brought about intensified negotiations during the early part of May 1952. Meetings were held at the White House, and on May 19, Dr. Steelman promulgated a basis of settlement.

The railroads accepted this proposal on the same date, but not until the evening of May 21 did the three organizations accept. Formal agreements were signed on May 23. The agreements were substantially identical with the Trainmen's agreement of a year earlier with regard to wages, cost-of-living adjustments, 5-day week for yardmen, and moratorium provisions (except for mileage limitations). They also included the applicable rules changes contained in the Trainmen's agreement except for two rules. One of these (the more-than-one-class of service rule) was later disposed of by arbitration and the other (the interdivisional run rule) was remanded for negotiation on individual properties, with provision for appeal of unsettled disputes to a national committee composed of an equal number of carrier and employee representatives.

On May 23, 1952, the secretary of the army ordered government control of the railroads terminated, thus ending 21 months of such control. General Order No. 6 of the Department of the Army effectuated the termination.

Union Shop. In late 1951, an emergency board (the Cole board) was appointed to investigate a dispute with seventeen cooperating unions of non-operating employees involving their desire to negotiate union shop agreements. Hearings began in Washington on December 11, 1951, and continued through December 17, during which the employees submitted their case. After the holiday recess, hearings were resumed on January 8, 1952, and concluded on January 29. The board's report, issued on February 14, recommended thath the parties enter into a joint national agreement for a union shop.

Representatives of the seventeen cooperating organizations immediately called upon the carriers "to negotiate an agreement within the framework of the board's recommendations."

In the latter part of March, a conference committee for Eastern carriers was appointed and negotiations with representatives of the organizations began on May 6. About the middle of May, a conference committee was formed for Western carriers, which joined in negotiations on May 19. On May 23, the meetings were recessed until June 30.

On August 29, 1952, Eastern carriers signed an agreement effective September 15, providing for a union shop and check-off. The Eastern agreement does not require union membership of fully excepted employees nor of employees where management retains the right to fill the positions solely on suitability and merit rather than on seniority.

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A Review of RAILWAY OPERATIONS in 1952

By J. H. PARMELEE

Vice-President and Director
Bureau of Railway Economics
Association of American Railroads

Summarizing the principal railroad developments of 1952, freight and passenger traffic showed moderate decreases below 1951. Both operating revenues and operating expenses rose to record levels. Taxes exceeded those of any previous peacetime year. Net railway operating income, although greater than in 1951, barely topped that of 1950. The same was true of net income, after charges. The 4 per cent rate of return on net investment was slightly above the 10-year (1943-1952) average of 3.95 per cent, but left much to be desired in the way of adequate net earnings.

RAILWAY OPERATIONS IN ANY YEAR are reviewable against a backdrop of major developments in our national political and economic life, developments in which railroads play an important part, and which, in turn, vitally affect rail traffic and earnings.

The worldwide struggle between communism and the free nations continues unabated. Appraisal of that tense situation is that it is no better than a year ago; it may perhaps be no worse.

So far as the United States is concerned, the international situation is reflected in increased government spending at home, expanded and accelerated produc-

tion, particularly in heavy industries, and a continuing drain on our resources.

On the domestic political scene, the national election took top billing in 1952. The election indicated the strong desire of the American people for a change in administration. It is too early to evaluate the effects on our national life of this change, after 20 years, but there is confidence in the integrity and ability with which the new team will handle the many difficult problems they will encounter in both international and domestic fields.

It seems certain that defense efforts will be maintained with able direction and planning, and that our domestic economic problems, which center largely around control of the inflationary spiral, will be met resolutely and with sound judgment. Reduction in unnecessary government spending, and lightening of the tax burden, are avowed objectives of the new administration.

Economic trends during 1952 were generally favorable, and in a number of instances reached record levels. Industrial activity was never so high under conditions of relative peace. The Federal Reserve Board Index of industrial production stood at 229 in November, a peacetime record, and had it not been for the midyear steel strike, the annual index for 1952 would probably have been exceeded only by those of the wartime peak years 1943 and 1944.

According to the Department of Labor, non-farm employment in 1952 was also of record proportions; the total for November was 47,862,000. New construction totaling more than $32 billion ran ahead of even the high level of 1951, while expenditures for new plant and equipment topped the record total of 1951 by about 5 per cent. Both gross national product and national income reached new peaks. Farm income was up, compared with 1951. Population continued to increase at an annual rate of more than 2½ million persons. Businesswise, 1952 was a "big" year.

A Year of Testing

Turning to developments in the field of railroad transport, 1952 was what may be termed a year of testing. The impacts of events and influences which had their inception in preceding years, more especially in 1951, were more fully felt in 1952. During virtually all of the postwar period, a continuing race has been run between rapidly rising costs of operation and more slowly rising rates. The postwar years have been punctuated by numerous wage movements and general rate cases. Although 1952 did not develop many wage and rate proceedings, it was not wholly free from changes in rate and wage scales that were effective for but part of a year, as witness the Interstate Commerce Commission's rate decision in Ex Parte 175, effective in May, and escalation wage adjustments from time to time during the year. Nevertheless, the year provided a more thorough test of what may be expected under existing rate and wage levels than was previously possible. The fact that both freight and passenger traffic volumes continued at high levels, although slightly below those of 1951, created reasonably favorable conditions for such a test. How closely the results obtained in 1952 will prove representative of those of succeeding years, only the future will disclose.

Efficient management, assisted in some degree by small reductions in freight and passenger train-miles, kept employment levels somewhat below those of 1951, but because of increased wage rates, the total payroll was close to that of 1951. Annual and hourly earnings of employees surpassed all previous peaks.

Operating efficiency in 1952 ran close to or at record levels. This was the case in both freight and passenger services, and applied to the principal efficiency factors, such as ton-miles per freight train-hour, average freight trainload and carload, average train speed, and locomotive performance per day. Operations were conducted relatively free of accidents and resulting casualties.

Capital improvement programs, carried out at great cost in both 1951 and 1952, contributed heavily to these efficiency achievements of 1952. In particular, railroads continued their almost revolutionary policy of substitution of diesel for steam power. The programs would have proceeded more rapidly, had it not been for difficulties encountered in procurement of adequate materials for freight cars and locomotives, also steel rail, other iron and steel products, and construction materials needed in maintenance work.

Several notable court decisions marked the year. One was dismissal of the antitrust suit against a large number of individuals and organizations, including the Association of American Railroads, which was brought by the Department of Justice in 1944. Another was the decision dismissing the complaint of Seatrain Lines against a number of railroads and organizations, and in effect remanding the questions involved to the I.C.C. for adjudication. Other decisions strengthened the hands of the commission with respect to its jurisdiction over intrastate rates, and its discretionary powers regarding rate suspensions.

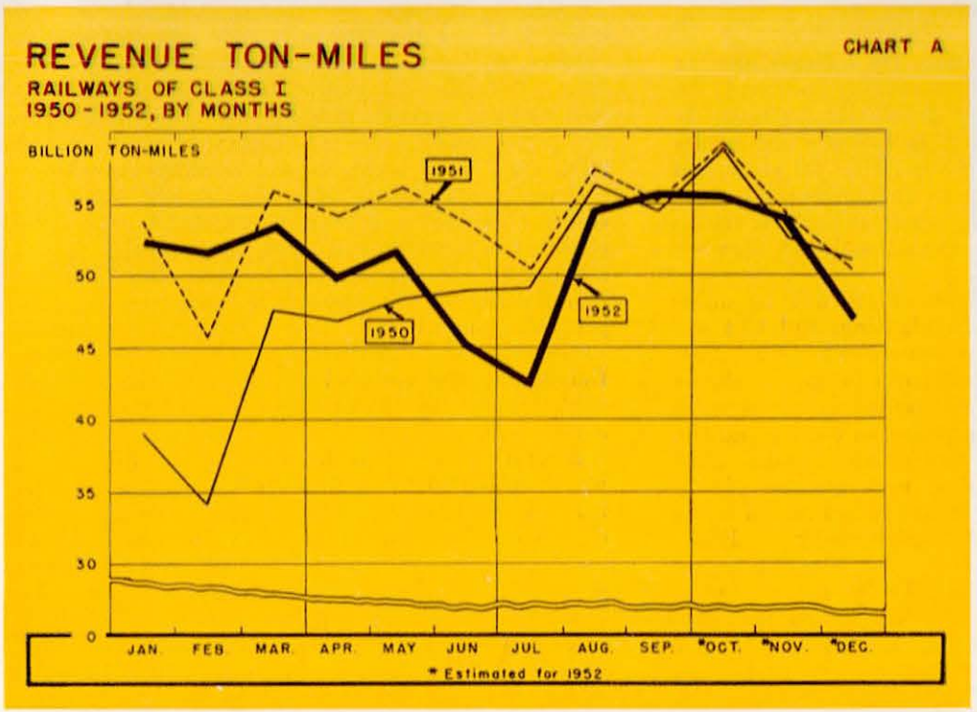
In other matters of public policy, especially legislative and administrative, less was accomplished than had been expected as a result of extensive investigations conducted over the past three years by Congress, by such groups as the Transportation Association of America, and by other interested organizations and individuals. The process of education in these matters is a slow one, but progress was made toward a clearer understanding of the fundamentals involved, with results perhaps yet to be developed.

Railroads will not find it possible fully to occupy their rightful and significant place in the national economy until certain legislative, regulatory, and competitive handicaps under which they operate have been eliminated, or at least alleviated. Those handicaps will persist until and unless an enlightened public policy comes to recognize the many drastic changes that have taken place in modern transport.

All the statistics in this review relate to line-haul railways of Class I, and are derived either from reports of the Interstate Commerce Commission or from tabulations of the Association of American Railroads.

Both freight and passenger traffic declined in 1952. The prolonged labor dispute in the steel industry, which resulted in virtual stoppage of production during June and July, and reduced the output of steel in April, May, and August, together with sporadic although not protracted work stoppages in the coal fields, accounted for the great bulk of the decline in freight traffic in 1952. Among other things, reduced military requirements contributed to the small decrease in passenger traffic.

Freight carloadings decreased in 41 of the first 51



weeks of 1952, and ton-miles in eight of the first ten months. The months in which carloadings increased in 1952 were February (due to strike conditions which prevailed in the corresponding month of 1951), September (when exceptionally heavy ore movements were handled), and November (when the level of industrial production reached a new postwar high). The months of greatest decreases, both in carloadings and ton-miles, were June and July, when the steel mills were shut down.

Passenger traffic (revenue passenger-miles) increased over 1951 in each of the first five months of 1952, a continuation of the upward trend which began in the fourth quarter of 1950 and extended through 1951. Beginning with June, however, passenger traffic showed consistent decreases to the end of the year, which cumulatively offset the cumulative increases of the first five months.

Comparative statistics of freight and passenger traffic handled by railways of Class I in each of the past 10 years, 1943 to 1952, are shown in Table 1. Entries for the year 1952 are partially estimated, based on statistics of freight carloadings for the first 51 weeks of the year and statistics of ton-miles and passenger-miles for the first 10 months.

Table 1—Comparative Traffic Summary: 1943-1952

Revenue Carloadings (thousands)			
1952	38,000	1947	44,502
1951	40,497	1946	41,341
1950	38,903	1945	41,918
1949	35,911	1944	43,408
1948	42,719	1943	42,440
Revenue Ton-miles (millions)			
1952	612,000	1947	654,728
1951	646,620	1946	591,982
1950	588,578	1945	681,001
1949	526,500	1944	737,246
1948	637,917	1943	727,075
Revenue Passenger-miles (millions)			
1952	34,200	1947	45,921
1951	34,614	1946	64,673
1950	31,760	1945	91,717
1949	35,095	1944	95,549
1948	41,179	1943	87,820

Carloadings. Carloadings of revenue freight declined from 40,500,000 in 1951 to 38,000,000 in 1952, a reduction of about 6 per cent. Loadings for 1952 were the second lowest experienced in the postwar period, being 6,500,000 cars fewer than in the high year 1947, although some 2,000,000 cars more than in the low year 1949.

Each of the eight carloading groups declined, as shown in Table 2. Greatest relative declines (first 50 weeks) took place in loadings of coke (20 per cent), ore (12 per cent), and coal (10 per cent) each of those groups being adversely affected by the steel strike. Smallest declines, about one per cent, were experienced in grain and grain products and in live stock. Loadings of forest products, miscellaneous (mostly manufactured goods), and l.c.l. freight were each lower than in 1951 by about 5 per cent.

Ton-miles. Ton-miles of revenue freight approximated 612 billion in 1952, a decrease of 35 billion, or 5.4 per cent, below 1951. In the six preceding postwar years, ton-miles exceeded 612 billion in three years (1947, 1948 and 1951), and fell below that level in three years (1946, 1949 and 1950). The average for that six-year period was 608 billion per year. Thus, in terms of ton-miles, 1952 was hardly better than an average postwar year. The primary reason was the great decline in ton-miles during June and July, brought out sharply in Chart A.

Table 2—Carloadings by Commodity Groups
(50 weeks 1952 vs. 1951)

	1952 (000)	Decrease under 1951 Number (000)	Per cent
Live Stock	478	4	0.7
Grain and Grain Products	2,492	20	0.8
Forest Products	2,192	108	4.7
Mdse., L.C.L.	3,573	179	4.8
Miscellaneous	18,272	982	5.1
Coal	6,486	757	10.4
Ore	2,615	362	12.2
Coke	644	162	20.1
	36,752	2,574	6.5

Chart A shows monthly trends in revenue ton-miles for the years 1950, 1951, and 1952.

Except for the months of June and July, the ton-mile curve for 1952 maintained a fairly even level, seasonally considered. The sharp June-July dip, however, emphasizes the sensitiveness of railroad freight operations to so radical a dislocation of basic production activities as a nationwide stoppage in the output of iron and steel.

Chart B compares the monthly ton-mile trend for 1952 with corresponding trends for 1947 (the high postwar year) and 1949 (the low postwar year).

Survey of this chart shows that freight traffic for 1952 followed a median course, when compared with 1947 and 1949. There were variations from that general trend, as in February, June and July. Except for the June-July dip, the 1952 curve ran generally closer to 1947 than to 1949, with the result that the 1952 total was somewhat above the average of 1947 and 1949. Thus freight traffic for 1952 slightly exceeded both the

annual average of the preceding six years, as already pointed out, and the annual average of the highest and lowest of the six years.

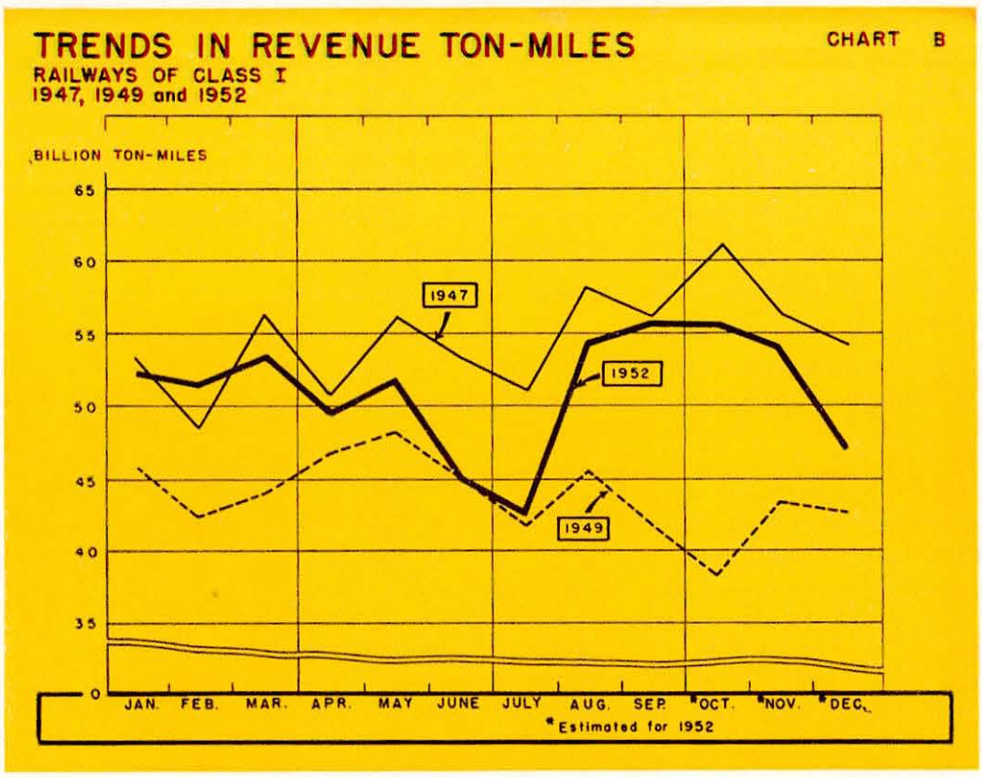
Passenger-miles. Revenue passenger traffic for the first 10 months of 1952 was approximately the same as for the same period of 1951. The trend in the last half of that period was downward, and foreshadowed further declines in November and December. Passenger-miles for the year 1952 approximated 34.2 billion, about one per cent below the 34.6 billion handled in the preceding year. Passenger-miles in September were the smallest for any corresponding month in the entire postwar period, and the same was probably true for October and possibly for November.

Chart C traces monthly trends in passenger-miles for 1950, 1951 and 1952.

The sharper downward trend in passenger traffic from August to October 1952 than for the same periods of 1950 and 1951 is a development that calls for intensive analysis.

Notwithstanding decreases in both freight and passenger traffic in 1952, financial results of Class I railways showed improvement. The improvement was largely the result of the 6.8 per cent increase in freight rates and charges authorized by the I.C.C. last spring.

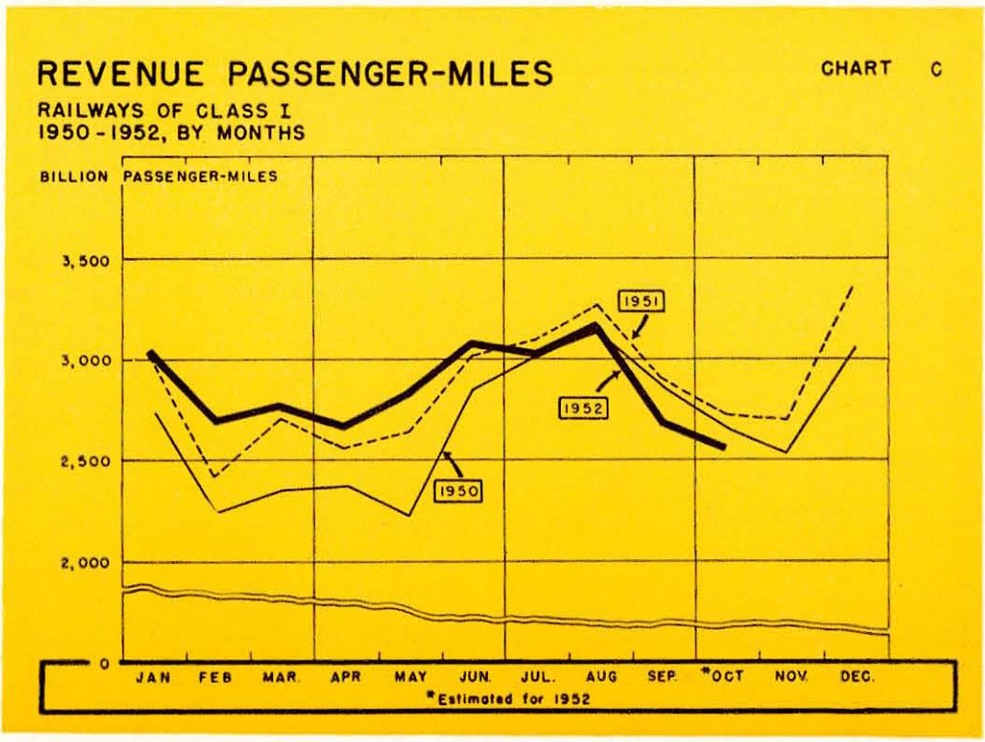
For the second successive year, rail operating revenues climbed to a new all-time high, approximating $10.6 billion in 1952. Operating expenses followed suit, also reaching a new high level. Although railroads had substantial deductions from taxable income in 1952, arising from accelerated amortization of defense projects, their taxes were greater than in any other year save only the war years 1943 and 1944.



Net railway operating income and net income after charges in 1952 were both greater than in 1951, and were both close to 1950 levels. Had it not been for the amortization tax adjustments referred to above, net railway operating income and net income in 1952 would have fallen below 1950.

The rate of return on net property investment approximated 4 per cent in 1952, a return less than the 4.23 per cent earned in 1950, but greater than the 3.69 per cent earned in 1951.

Financial results of Class I railway operations for the year 1952, based on 10 months actual and 2 months



estimated, are set out in the following three tables, Tables 3 through 5. For comparative purposes, corresponding items for the years 1951 and 1950 are included.

Table 3 shows the principal items in the income account for the three years, the highlights of which have already been summarized. Comparing 1952 with 1951, operating revenues were up 2.0 per cent; operating expenses increased 0.3 per cent; net railway operating income increased 11.4 per cent; net income was up 11.8 per cent. The tax rise of about 8 per cent was due almost wholly to a substantial increase in federal income taxes.

Table 3—Condensed Income Account: 1950-1952

	1952 (millions)	1951 (millions)	1950 (millions)
Total operating revenues	$10,600	$10,391	$9,473
Total operating expenses	8,065	8,041	7,059
Operating ratio (per cent)	76.1	77.4	74.5
Taxes	1,300	1,203	1,195
Net railway operating income	1,050	943	1,040
Rate earned (per cent)	4.00	3.69	4.23
Net income after charges	775	693	784

Table 4 shows the details of operating revenues. Three of the five principal revenue accounts increased, 1952 over 1951, while two showed decreases. All showed increases over 1950, excluding back mail pay accrued in that year. Freight revenue in 1952 increased over 1951 by about 2 per cent, the composite effect of smaller traffic volume on the one hand and increased rates on the other hand. Passenger revenue increased by about one one per cent in the face of a decrease in traffic of about the same percentage. Passenger and commutation fares were higher in some areas than in 1951.

Mail revenue was off by about 3 per cent, but express revenue rose sharply. The Railway Express Agency experienced a substantial increase in traffic volume, its l.c.l. shipments rising some 16 per cent, largely as a result of restrictions that became effective on the size and weight of parcel post shipments on January 1. The R.E.A. was consequently in position to increase its distribution of net earnings to railroads and other transport agencies. "All other" revenue declined by about 3 per cent.

Table 4—Operating Revenues: 1950-1952

	1952 (millions)	1951 (millions)	1950 (millions)
Freight	$8,800	$8,634	$7,817
Passenger	910	901	814
Mail	320	331	*374
Express	140	82	81
All other	430	443	387
Total	$10,600	$10,391	$9,473

*Includes $107 million of mail pay applicable to years 1947-1949.

Table 5—Operating Expenses: 1950-1952

	1952 (millions)	1951 (millions)	1950 (millions)
Maintenance of Way	$1,510	$1,479	$1,287
Maintenance of Equipment	1,965	1,945	1,708
Transportation	3,920	3,974	3,491
Traffic, general & other	670	643	573
Total	$8,065	$8,041	$7,059

Table 6—Rate of Return: 1943-1952

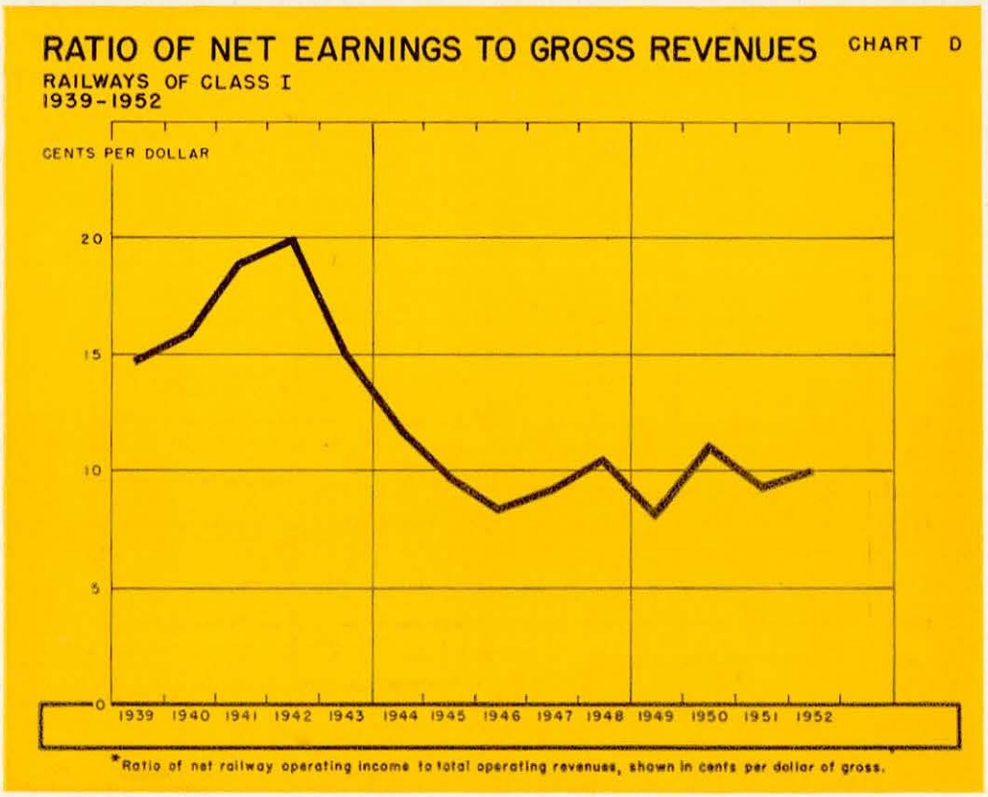
Year	Net railway operating income (millions)	Rate of return on investment after depreciation*
1952 (Est.)	$1,050	4.00
1951	943	3.69
1950†	1,040	4.23
1949	686	2.86
1948	1,002	4.24
1947	781	3.41
1946	620	2.75
1945	852	3.77
1944	1,106	4.73
1943	1,360	5.75

* Investment in road and equipment (less accrued depreciation and amortization), plus cash and material and supply inventories.
† Includes the effect of $107 million of back mail pay accrued in 1950, but applicable to prior years.

Principal operating expense accounts appear in Table 5. Both maintenance expense accounts showed slight increases in 1952, as also did traffic, general and other expenses, individually and collectively. Transportation expenses declined, reflecting reduced train operations in 1952.

Table 6 shows for each year of the latest ten-year period the net railway operating income, and rate of return earned on net investment. In five of the ten years (including 1952), net railway operating income exceeded one billion dollars; in the other five years, it fell below that level. Also, in five of the ten years (again including 1952), the rate of return was 4 per cent or more; in the other five years, it was less than 4 per cent.

The weighted average rate of return on net investment for the ten years included in Table 6, 1943 to 1952, was 3.95 per cent. This would be inadequate under any conceivable conditions of the national economy; it is highly inadequate under the conditions of top production levels and general prosperity now prevalent. With the requirement resting on the railroads for improved plant, more


RATIO OF NET EARNINGS TO GROSS REVENUES
CHART D
RAILWAYS OF CLASS I
1939-1952
CENTS PER DOLLAR
20
15
10
5
0
1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952
*Ratio of net railway operating income to total operating revenues, shown in cents per dollar of gross.

freight cars, and greater efficiency and economy, their net earnings should be sufficient to finance a substantial proportion of the heavy capital expenditures that are, and will continue to be, needed for the improvement program.

Another measure of the relative level of net earnings is the ratio of such earnings to total revenues. That ratio can be, and frequently is, expressed in terms of cents remaining for net railway operating income out of each dollar of total (or gross) operating revenues. The ratio has decreased substantially since the war. During the 20 years prior to the war, or from 1921 to 1940, it averaged 15.7 cents per dollar of gross, and ranged between a low of 10.4 cents per dollar (1932, a depression year) and 19.9 cents per dollar (1929). During the war it rose again to 19.9 cents, in 1942. From that point, the ratio decreased rapidly to 8.1 cents in 1946, and has fluctuated around the 10-cent level since.

Chart D shows this ratio of net earnings to gross revenue, in terms of cents per dollar of gross, for each year from 1939 to 1952.

Decrease in Net Working Capital

Railroads have emphasized, in recent rate cases before the commission, the rapid reduction since the end of the war in their net working capital, which is the excess of current assets (exclusive of material and supply inventories) over current liabilities. During the war, net working capital was accumulated to a greater total amount than ever before, due largely to inability to carry out needed improvements under wartime pressures. Since the war, the railroads have drawn heavily on those accumulated resources, for down payments on new equipment, for improvement of fixed property, and for other capital purposes.

NET WORKING CAPITAL
(millions of dollars)

December 31		December 31	
1945	$1,659	1949	$658
1946	1,260	1950	806
1947	870	1951	531
1948	746	1952 (Sept. 30)	572

Although net working capital showed a moderate increase during the first nine months of 1952, it is a question how low that important factor of comparatively liquid recources can be permitted to go, without impairing the credit of the industry, or at least the financial status of some of the companies within the industry.

During 1952, two small railway companies, aggregating less than 100 miles, were discharged from trusteeship. This reduced the total number in bankruptcy from 42 to 40, and the operated mileage involved from 12,101 to 12,022. This was the smallest mileage involved in bankruptcy proceedings since 1930.

No railway company of Class I was placed in, or discharged from, receivership or trusteeship in 1952. At the close of the year, only one Class I company (Georgia & Florida) remained in receivership, while 11 Class I companies were still in the hands of trustees, six of which are included in the Missouri Pacific system. The remaining five companies were the Wisconsin Central, Florida East Coast, Long Island, New York, Ontario & Western, and New York, Susquehanna & Western.

The commission on March 17 approved a new plan of reorganization for the Wisconsin Central Railway Company. The plan proposes substantially increased capitalization, but the commission reaffirmed its previous finding that the common stock of the present company is without value and ineligible to participate in the reorganization. The plan, the effective date of which, if approved, will be July 1, 1952, has been submitted to the court for approval.

Federal Judge L. W. Strum, in the United States District Court at Jacksonville, on March 11 disapproved the commission's plan for reorganization of the Florida East Coast, which would have merged it with the Atlantic Coast Line. Effective June 1, Judge Strum directed the trusteeship under which the company has been operated since January 25, 1941, to revert to receivership proceedings, and ordered that the company be sold through foreclosure. The Atlantic Coast Line in April filed notice of appeal from Judge Strum's order with the United States Court of Appeals.

Acting on recommendations of a panel of its Finance Bureau officials, the commission announced on November 19 that changed conditions necessitated a review of the 1949 plan of reorganization for the Missouri Pacific and its affiliates, with a revision if found necessary. Following receipt of a report from the commission to that effect, Federal Judge G. H. Moore, in the United States District Court at St. Louis, early in December signed an order officially returning the plan of reorganization to the commission for reexamination.

Railroad employment in 1952 averaged about 1,226,000, some 50,000 less than in 1951 but 6,000 more than in 1950. The railroad payroll at $5,325 million in 1952, on the other hand, was only slightly less than the $5,339 million payroll for 1951 and considerably exceeded the $4,594 million payroll for 1950.

Table 7 shows the average number of railroad employees, total payroll, average annual earnings per employee, and the average straight time rate of pay and earnings per hour for each year, 1940 through 1952.

All the averages relating to employee compensation were at peak levels in 1952. This was true of wage rates per hour, and of both annual and hourly earnings per man. The straight time hourly *rate* represents the straight time rate per hour paid for, while straight time hourly *earnings* represent what the average employee actually earns per straight time hour worked. Road employees on a mileage basis earn more, on the average, for an hour of work than the applicable hourly rate.

Annual earnings of $4,342 per railroad employee in 1952 were 3.8 per cent greater than the $4,184 average

Table 7—Employees and Their Compensation

Year	Average Number	Total Payroll (millions)	Average Annual Earnings of Employees	Average Hourly Straight Time Rate (cents)	Average Straight Time Earnings (cents)
1952	1,226,429	$5,325*	$4,342*	184.1*	193.2*
1951	1,276,000	5,339*	4,184*	175.7*	184.1*
1950	1,220,401	4,594	3,765	156.9	164.5
1949	1,192,019	4,419	3,707	144.1	150.6
1948	1,326,597	4,769	3,595	131.3	136.8
1947	1,351,863	4,352	3,219	117.5	122.4
1946	1,359,263	4,171	3,068	111.7	116.4
1945	1,419,505	3,862	2,721	93.3	97.2
1944	1,414,776	3,858	2,727	93.0	96.8
1943	1,355,114	3,521	2,598	89.3	92.9
1942	1,270,687	2,932	2,307	83.5	87.0
1941	1,139,925	2,332	2,045	76.0	80.3
1940	1,026,848	1,964	1,913	74.2	77.5

* Includes the full effect, including retroactive payments, of the various wage increases and cost-of-living adjustments made to employees during 1951 and 1952.

for 1951, and 15.3 per cent greater than in 1950. The 1952 average was 59.2 per cent higher than the 1944 wartime peak of $2,727, and more than two and one-quarter times the prewar level of $1,913 in 1940.

The average straight time hourly rate of pay stood at 184.1 cents in 1952. This average was 4.8 per cent above the 1951 level, 17.3 per cent higher than in 1950, 98.0 per cent greater than in 1944, and nearly two and one-half times the 1940 prewar rate.

Quarterly cost-of-living wage adjustments were first made effective for railroad employees in 1951. Average straight time rate and earnings per hour for 1951 and 1952 reflect not only the basic wage increases made effective in 1951, but the cost-of-living allowances in both years as well.

The 1952 cost-of-living (escalation) wage adjustments consisted of an increase of four cents per hour effective January 1, a reduction of one cent per hour on April 1, an increase of two cents per hour on July 1, and an additional two cents on October 1. So, in 1952, the escalation provisions in railroad labor contracts provided for a net wage increase totaling seven cents per hour. The 1951 total cost-of-living allowance was also seven cents, thus producing a cumulative cost-of-living allowance of 14 cents per hour over the two-year period.

Thus, at the end of 1952, the straight time rate per hour for the average railroad employee stood at 186.2 cents. Because of a slight decline in the Consumers' Price Index, leading to a downward adjustment of one cent per hour on January 1, 1953, the hourly rate became 185.2 cents on that date.

Army Control Terminated

At the beginning of 1952, the railroads were still under Army control. Governmental seizure had occurred on August 27, 1950, to avoid a complete stoppage in rail transportation service because of the threat of a nationwide strike by two operating unions. Army control had not yet been terminated on January 1, 1952, since the Engineers, Firemen and Conductors had not accepted wage and rules settlements similar to those made applicable to other classes of employees. Prolonged negotiations with those three unions continued into 1952.

Firemen. On November 6, 1951, the President of the United States created an emergency board (the Daugherty board) to consider the dispute with the Firemen and make recommendations for settlement. The hearings began in Washington on November 27, but the Firemen refused to participate further than to make an opening statement to the board. However, the railroads presented their case to the board and hearings were concluded on December 17, 1951. The board reported on January 25, 1952, its recommendations following the lines of the applicable portions of the Trainmen's and Non-operating Employees' agreements consummated in 1951. The railroads accepted the board's report on February 5, and the Firemen rejected it on February 11.

Engineers. During the course of the hearings on the dispute with the Firemen, negotiations were actively continued with the Engineers. On December 19, 1951, the Engineers renewed their request for appointment of an emergency board, but the board was not created, and on January 15, 1952, the Engineers withdrew their request.

Conductors. On December 7, 1951, the Conductors requested the secretary of the army to enter into an arbitration agreement to settle their dispute. On January 10, 1952, the Conductors wrote the army seeking an interim wage increase equal to those effected by agreements with other groups. The army declined to accede to this request.

Engineers, Firemen and Conductors. On March 9, 1952, the three organizations called a strike on New York Central lines west of Buffalo and on the Terminal Railroad Association of St. Louis. A temporary restraining order was obtained by the army and by March 12, nearly all the workers were back on their jobs. Although the organizations vigorously opposed it, a preliminary injunction against the strike was issued on April 23, and their appeal to the U. S. Appeals Court was lost on May 9. An appeal to the Supreme Court of the United States for a stay of the preliminary injunction was likewise lost on May 10.

Presidential Assistant John R. Steelman again brought about intensified negotiations during the early part of May 1952. Meetings were held at the White House, and on May 19, Dr. Steelman promulgated a basis of settlement.

The railroads accepted this proposal on the same date, but not until the evening of May 21 did the three organizations accept. Formal agreements were signed on May 23. The agreements were substantially identical with the Trainmen's agreement of a year earlier with regard to wages, cost-of-living adjustments, 5-day week for yardmen, and moratorium provisions (except for mileage limitations). They also included the applicable rules changes contained in the Trainmen's agreement except for two rules. One of these (the more-than-one-class of service rule) was later disposed of by arbitration and the other (the interdivisional run rule) was remanded for negotiation on individual properties, with provision for appeal of unsettled disputes to a national committee composed of an equal number of carrier and employee representatives.

On May 23, 1952, the secretary of the army ordered government control of the railroads terminated, thus ending 21 months of such control. General Order No. 6 of the Department of the Army effectuated the termination.

Union Shop. In late 1951, an emergency board (the Cole board) was appointed to investigate a dispute with seventeen cooperating unions of non-operating employees involving their desire to negotiate union shop agreements. Hearings began in Washington on December 11, 1951, and continued through December 17, during which the employees submitted their case. After the holiday recess, hearings were resumed on January 8, 1952, and concluded on January 29. The board's report, issued on February 14, recommended thath the parties enter into a joint national agreement for a union shop.

Representatives of the seventeen cooperating organizations immediately called upon the carriers "to negotiate an agreement within the framework of the board's recommendations."

In the latter part of March, a conference committee for Eastern carriers was appointed and negotiations with representatives of the organizations began on May 6. About the middle of May, a conference committee was formed for Western carriers, which joined in negotiations on May 19. On May 23, the meetings were recessed until June 30.

On August 29, 1952, Eastern carriers signed an agreement effective September 15, providing for a union shop and check-off. The Eastern agreement does not require union membership of fully excepted employees nor of employees where management retains the right to fill the positions solely on suitability and merit rather than on seniority.

At the year's end, no progress had been made in consummating a regional union shop agreement for Western carriers. No regional negotiations of any kind had been held for Southeastern carriers. Western and Southeastern railroads generally take the position that they are not willing to make an agreement which compels a man to join a union against his will in order to earn a living. Some Western railroads have, however, signed individual union shop agreements with their non-operating unions.

The operating unions had also served notices on individual carriers of their desire to negotiate union shop agreements. Some railroads have signed such agreements, and other roads have agreed to check-off arrangements without the union shop, but no atttempt has been made by the operating unions to negotiate on a national or regional basis.

The index of railway material prices compiled by the Bureau of Railway Economics, using the period 1935-1939 as 100, is shown in Table 8 for various dates from December 1939 to October 1952.

The index rose sharply from 101.3 at the end of 1939 to the overall high of 230.1 in October 1951. The index fell slightly in each of the next three quarterly periods but turned upward again in the third quarter of 1952, standing at 227.0 on October 1, 1952. The index for material and supplies (other than fuel) rose to an all-time peak of 232.0 on October 1, 1952, but the fuel index, at 218.9, was nearly 12 points below its peak of October 1951, one year earlier.

Price trends during the first nine months of 1952 were as follows: all materials, from 229.7 on January 1 to 227.0 on October 1, a decrease of 2.7 points; material and supplies (other than fuel), 229.7 to 232.0, an increase of 2.3 points; fuel, 229.7 to 218.9, a decrease of 10.8 points. The October index reflected the July increase in steel prices which was the aftermath of the steel strike, but not the increased price of coal resulting from the substantial increase authorized by government officials in mine wage rates. Diesel fuel experienced little price change during the nine months, but fuel oil prices declined rather sharply.

Such further revisions in railroad rates and fares as took place in 1952 were, for the most part, designed to offset increased wage and price costs incurred largely in the preceding year.

Freight Rates. Additional increases in freight rates and charges averaging about 6.8 per cent over rates then in effect were authorized by the I.C.C. in a report dated April 11, 1952. These increases, which grew out of further proceedings in Ex Parte 175, were applicable

Table 8—Railway Material Price Index

(1935-1939=100)

	All materials including fuel	Material & supplies (other than fuel)	Fuel (coal & oil)
October 1, 1952	227.0	232.0	218.9
July 1, 1952	226.6	228.4	223.6
April 1, 1952	228.0	228.9	226.6
January 1, 1952	229.7	229.7	229.7
October 1, 1951	230.1	229.8	230.6
July 1, 1951	229.9	229.5	230.6
January 1, 1951	223.9	225.1	222.0
July 1, 1950	206.5	200.8	215.7
January 1, 1950	198.1	195.9	201.9
July 1, 1949	197.4	192.9	204.7
December 1, 1948	214.2	202.0	234.1
December 1, 1945	135.9	132.8	142.3
December 1, 1939	101.3	103.2	97.5

in the form of surcharges. They became effective, except as to grain, on May 2, 1952, and as to grain on May 17. The authorization expires on February 28, 1954, unless modified or terminated prior to that date.

These latest increases represented culmination of a series of freight-rate advances authorized from time to time in Ex Parte 175 proceedings, a general rate case which had its inception in 1951. Developments in Ex Parte 175, which preceded the April 11 decision, may be summarized as follows:

1. On January 16, 1951, the railroads petitioned the commission for a general 6 per cent increase in freight rates and charges, and asked that the proposed increase be put into effect on an interim basis pending full hearings.
2. The commission, on March 12, 1951, authorized interim increases which averaged about 2.4 per cent (4 per cent in Eastern territory and 2 per cent in Southern and Western territories and interterritorially, with specified maxima on certain commodities).
3. Because of continuing upward trends in operating costs, the railroads again petitioned the commission on March 28, 1951, raising the general increase sought from 6 per cent to 15 per cent.
4. On August 2, 1951, the commission authorized increases which averaged about 6.6 per cent (9 per cent in the East and 6 per cent elsewhere, with exceptions, designated as surcharges to expire February 28, 1953). These increases superseded the interim increases authorized on March 12, 1951.
5. The railroads filed a petition on October 19, 1951, for reconsideration of the decision of August 2, 1951, and asked the commission to grant the full increase of 15 per cent which had been sought in their petition of March 28, 1951. Further hearings were held, which with oral argument were concluded on February 29, 1952.

The commission's decision of April 11 authorized increases (in the form of surcharges) of 15 per cent in basic freight rates in all territories, with certain exceptions, to expire on February 28, 1954. After allowance for the various hold-downs and exceptions, the authorized increases (which superseded all prior authorizations in Ex Parte 175) were estimated by the commission to average about 13.8 per cent over rates in effect on September 1, 1949, and about 6.8 per cent over the increase authorized August 2, 1951. Additional revenue to be realized from the April 11 authorization was estimated by the commission's Bureau of Transport Economics and Statistics at $635 million per year.

Passenger Fares. A group of Southwestern railroads petitioned the commission on May 5 for approval of a 10 per cent increase in basic passenger fares. In a proposed report made public on December 3, I.C.C. Examiner Palmer recommended approval. Such an increase, if authorized, would raise basic coach fares for these roads from 2.5 cents to 2.75 cents per mile and sleeping and parlor car fares from 3.5 cents to 3.85 cents per mile. The examiner pointed out that with the exception of increases authorized in 1951, this was the first time in almost five years that any of the Western roads had proposed an increase in pasesnger fares. A group of Southeastern railroads increased their basic passenger

fares by 10 per cent on November 1, 1951, bringing them up to the levels proposed by the Western carriers. Both coach and sleeping and parlor car basic fares in the East are at higher levels.

Furlough Fares. Reduced round-trip furlough fares for military personnel traveling in uniform at their own expense were continued throughout 1952, and the expiration date was extended to July 31, 1953. This permits military personnel on furlough to save up to one cent per mile when traveling in railway coaches.

Group Economy Fares. Reduced round-trip coach fares for small groups and families were placed in effect by 14 eastern railroads on June 25, for an experimental period, which has been extended from time to time to June 30, 1953. These group economy fares are designed to attract persons who might otherwise travel by automobile.

The trial plan makes a flat reduction of 25 per cent for three or more adults, or their equivalent, traveling together. Two half-fare passengers are counted as equivalent to one adult. Fares apply to round-trip coach tickets between points more than 100 miles apart, with certain exceptions.

More Rate Adjustments

Pullman Fare Increase. In a report made public July 18, the commission approved an increase in minimum fares for Pullman accommodations effective July 28. The new schedule established a minimum charge of $5.00 for a lower berth in standard Pullman cars and $3.95 in tourist cars. Previous minimum rates were $4.05 and $3.20, respectively. The schedule also replaces former intermediate fares of $4.35 and $4.70 in standard cars, and $3.45 and $3.75 in tourist cars. Charges for other sleeping car accommodations are related to fares for lower berths, and that relationship was not changed. Pullman fares were previously increased generally on June 1, 1951, by 15 per cent.

Express Rates. The Railway Express Agency petitioned the I.C.C. on January 17 for authority to make a flat increase of 6 cents in all rates stated as first class or multiples of first class, and in second class rates. The basis for the increase sought was primarily the 4 cents an hour wage increase to employees, effective January 1, 1952. Permission was granted to file a tariff making the proposed 6-cent increase, effective February 28.

Uniform Classification and New Class Rates. Uniform Classification No. 1 and the new class-rate set-up applicable under it became effective May 30, following a decision of the commission not to suspend them.

The uniform classification was published by the railroads in response to the commission's order in the Consolidated Freight Classification case (No. 28310). It supplants the territorial classifications previously in effect—Official, Southern, Western and Illinois. The new class-rate set-up is that prescribed by the commission in the Class Rate Investigation, 1939 (No. 28300). That uniform scale applies in all territories except Mountain Pacific territory, whose class rates are under investigation in a separate proceeding.

Railroads' Tariff Research Group. This research project of the railroads, inaugurated in 1951, actively continued its studies of tariff simplification and improvement in 1952. Its activities are described elsewhere in this issue of *Railway Age* by the group chairman, Charles S. Baxter. George W. Lupton, Jr. continues as a member of the group, but Alan M. White, as of January 1, 1953, replaced Harry F. Sutter, who has returned to his post with the Pennsylvania.

Revenue per ton-mile averaged 1.410 cents in the first nine months of 1952, and revenue per passenger-mile averaged 2.657 cents. Table 9 shows the averages for 1921, which were the prewar highs, for each year from 1943 to 1951, and for the first nine months of 1952.

Table 9—Revenue Per Unit of Traffic

Year	Per ton-mile (cents)	Per passenger-mile (cents)
1952 (9 mos.)	1.410	2.657
1951	1.336	2.601
1950	1.329	2.561
1949	1.339	2.452
1948	1.251	2.341
1947	1.076	2.097
1946	0.978	1.947
1945	0.959	1.871
1944	0.949	1.874
1943	0.933	1.882
1921	1.275	3.086

The ton-mile average for the first nine months of 1952 reflects the moderately higher freight rates in effect throughout part of that period, as well as the consist of the traffic handled. The midsummer steel strike considerably lessened the movements of such heavy bulk commodities as ore, coke and coal. This resulted in raising the average revenue per ton-mile to 1.475 cents and 1.524 cents, respectively, in June and July.

Average revenue per passenger-mile for the first nine months of 1952 was about 2 per cent greater than that for the year 1951. It was, however, below that of any of the years 1920 to 1930, inclusive. The 1952 average was affected by the ten per cent increase in basic passenger fares, authorized for most of the railroads in the Southeast in November 1951.

Table 10 shows gross capital expenditures of railways of Class I for additions and betterments to railway property, and the amounts spent for purchases of fuel, material and supplies, years 1943 to 1952.

Capital expenditures for 1952 are estimated at $1,332.6 million, the second greatest amount ever expended by the railroad for plant improvement in a single year. Shortages of materials were, in large measure, responsible for the decline in capital expenditures in 1952. The estimated total for 1952 was less than the record expenditure made in 1951 by some $81 million, but exceeded the total in the next largest year, 1949, by $20 million.

Capital expenditures for the 10-year period 1943 to 1952 aggregated $9,402 million, an average of $940 million per year. During the seven postwar years, 1946 to 1952, capital expenditures have aggregated $7,825 million, an average of $1,118 million per year. The

high level of expenditures since the war is due in part to much higher price levels, but also reflects the extensive improvement program under way during most of that period.

About 71.5 per cent of the 1952 expenditures was allocated to equipment and the remaining 28.5 per cent to roadway and structures. This apportionment indicates the continued emphasis on new equipment, especially diesel-electric locomotives and freight cars.

Purchases of fuel, material and supplies in 1952 are estimated at $1,900 million, a decrease of $276 million under 1951. The decline in purchases in 1952 was due in part to the reduced level of operations during the year, and in part to retarded deliveries in new rail and other steel products during and following the steel strike.

Table 10—Capital Expenditures and Purchases

Year	Gross capital expenditures (thousands)	Purchases of fuel, material and supplies (thousands)
1952 (est.)	$1,332,630	$1,900,000
1951	1,413,971	2,175,859
1950	1,065,842	1,739,908
1949	1,312,200	1,641,406
1948	1,273,484	2,183,331
1947	864,689	1,909,209
1946	561,957	1,570,555
1945	562,980	1,572,404
1944	560,112	1,610,529
1943	454,282	1,394,281

Table 11 shows railroad ownership of equipment at the end of each year 1946 to 1951, and as of December 1, 1952. New equipment on order at the end of each year or period is also shown, together with annual installations.

Table 11—Equipment Ownership and Installations

Class I Railroads

	Ownership at end of year	Installed during year	On order at end of year
Steam locomotives:			
1952 (Dec. 1)	16,231	*17	17
1951	21,200	18	19
1950	25,265	12	16
1949	28,809	57	13
1948	32,613	86	72
1947	34,800	72	30
1946	37,255	83	64
Diesel and electric locomotives: a			
1952 (Dec. 1)	15,168	*2,227	777
1951	13,017	2,540	1,720
1950	10,531	2,384	1,628
1949	8,169	1,808	885
1948	6,368	1,401	1,561
1947	4,964	771	1,196
1946	4,222	480	540
Freight-carrying cars: b			
1952 (Dec. 1)	1,755,742	*58,045	72,400
1951	1,751,731	84,218	104,831
1950	1,717,659	39,872	109,174
1949	1,749,736	78,876	12,861
1948	1,754,840	96,204	84,161
1947	1,731,231	57,031	99,216
1946	1,739,930	39,299	54,778

* 11 months.

a Includes 6 gas turbine-electric locomotives installed and 19 gas turbine-electric locomotives on order by the Union Pacific.

b These are statistics for Class I railroads, excluding railroad owned private refrigerator car lines. Including such lines, installations for the first 11 months of 1952 would be 61,110 cars, and the number on order December 1 would be 75,017 cars.

Locomotives. Ownership of steam locomotives continued to decline in 1952, whereas ownership of diesel-electric locomotives maintained its sharp upward trend.

During the seven postwar years, 1946 to 1952 (December 1), ownership of steam locomotives showed a net decrease of 22,452, electric locomotive ownership decreased by 77 (84 units), but there was a net increase of 11,515 diesel-electric locomotives (16,532 units). These figures do not take into account either the tractive power or relative efficiency of the different types of motive power. Actually, average tractive force for each type of locomotive (as operated) has increased as follows, comparing December 1, 1952, with the beginning of 1946:

	Average tractive force per locomotive as operated (lb.)		
Type of locomotive	Dec. 1, 1952	Jan. 1, 1946	Per cent increase
Steam	60,092	53,608	12.1
Diesel-electric	83,150	73,126	13.7
Electric	66,484	63,706	4.4

Locomotives on order as of December 1, 1952, totaled 794 (911 units), of which 748 (865 units) were diesel-electric. A total of 2,244 locomotives (2,865 units) were installed during the first eleven months of 1952, the second greatest total for any comparable period in the last quarter century. Diesel-electric units comprised 2,840 of the total 2,865 units.

The proportion of unserviceable locomotives (steam, electric, and diesel) was reduced in 1952. The bad order ratio increased slightly from 8.5 per cent on January 1, to the year's high of 8.6 per cent on March 1. From that point, the trend was steadily downward, being only 6.8 per cent on December 1. This was the lowest unserviceable ratio since March 1, 1949. The average unserviceable ratio for the first eleven months of 1952 was 7.7 per cent, compared with an average of 9.3 per cent for the year 1951.

Freight Cars. Installations of new freight cars by Class I railroads totaled 58,045 for the first 11 months of 1952. Installations for the year will approximate 63,000, compared with 84,218 cars in 1951.

Car builders were hard hit by the steel strike. Steel allocations were sharply curtailed, and delivery of new freight cars fell to a fraction of the 10,000-car-per-month program set up in 1950. For the first eleven months, freight car installations by Class I railroads barely kept ahead of the 54,034 retirements.

Freight car ownership of Class I railroads on December 1 numbered 1,755,742, an increase of 4,011 cars over their ownership at the end of 1951. The trend was upward month by month through June, when ownership (July 1) numbered 1,764,060 cars. After that date ownership (July 1) numbered 1,764,060 cars. After that date ownership declined each month until a slight gain was recorded for November. For the first six months of the year new freight car installations exceeded retirements by 12,329 cars. During the five months July to November, retirements exceeded new installations by 8,318 cars.

The decline in freight car ownership which set in after July 1 marked the end of a 20-month period of gradually increasing ownership which began in December 1950, and was interrupted only once—in July 1951—when freight car production was sharply reduced by strikes and floods.

The proportion of unserviceable freight cars fluctuated in 1952 between a low of 5.0 per cent on February 1 and March 1, and a high of 6.1 per cent on August 1. The ratio was reduced to 5.2 per cent on December 1. It averaged 5.4 per cent for the eleven-month period, compared with an average of 5.1 per cent for 1951.

Freight car shortages were smaller in 1952 than in

1951, in part because of lowered traffic volume. The first half of the year showed the greatest reduction. The maximum daily shortage of freight cars was reported for the week of September 27, at 18,558 cars. This was reduced to 709 for the week of December 13. The maximum for 1951 was 37,828 cars, for the week of March 3.

Passenger Equipment. Railroad ownership of passenger-train cars of steel or steel underframe construction numbered 36,416 on June 30, 1952. This was a reduction of 799 cars from the end of 1951. New passenger-train equipment of all types installed during the first six months of 1952 totaled 46 units, and 153 units were on order as of July 1. This compares with 189 units on order a year earlier, on July 1, 1951, and 152 units on order as of January 1, 1952.

The Diesel Upsurge

Rapidly increasing use of diesel-electric motive power since 1944 has been one of the highlights of postwar railroad operations. In 1944 only 3.6 per cent of gross ton-miles (freight cars and contents) were handled by diesel power, while 94.6 per cent were handled by steam locomotives. The spread between services performed by these two types of motive power narrowed in each succeeding year and in 1951 freight gross ton-miles performed by diesel power exceeded that of steam locomotives for the first time. In the first ten months of 1952, diesel-electric locomotives handled 64.9 per cent of freight gross ton-miles, compared with 33.2 per cent for steam locomotives and 1.9 per cent for electric and other locomotives.

A similar trend has taken place in passenger service. In 1944, only 8.0 per cent of all passenger-train car-miles were handled by diesel power, while steam locomotives handled 85.9 per cent. Five years later, in 1949, diesel power handled nearly one-half of all passenger-train car-miles, while those handled by steam locomotives were down to 44.3 per cent. In 1950, the diesel-electric proportion of passenger-train car-miles rose to 57.3 per cent of the total, and rose further to 62.7 per cent in 1951. For the first ten months of 1952, diesel power hauled 71.0 per cent of all passenger-train car-miles, steam locomotives handled 22.4 per cent, electric and other types of locomotives handling the remaining 6.6 per cent.

Use of diesel-electrics in yard service began earlier and on a more extensive scale than in the case of either of the two road services. The small, compact diesel unit with its high percentage of availability proved suitable for switching cars in congested yard areas. In 1944, 21.3 per cent of all yard locomotive hours was performed by diesel power, and 77.3 per cent by steam locomotives.

But in 1949, diesel-powered engines performed slightly more than half (50.8 per cent). This ratio increased to 60.5 per cent in 1950, and again to 67.8 per cent in 1951. For the first 10 months of 1952, diesel power performed 76.1 per cent of all yard locomotive-hours, compared with 22.6 per cent for steam locomotives and 1.3 per cent for electric and other locomotive types. Utilization of steam and diesel power in yard service was practically reversed between 1944 and 1952—a short eight-year period.

Table 12 gives the percentage utilization of steam, diesel-electric and other types of motive power in freight, passenger and yard services for 1944, and the years 1947 to date. Entries for 1952 are for the first 10 months.

Chart E outlines the upward trends since 1940, up to the first 10 months of 1952, in the proportionate utilization of diesel power in the three principal services: Freight, passenger, and switching. That proportion was less than 10 per cent for all three services in 1940, but ranged between 65 and 76 per cent for the respective services in 1952, a striking story of the rapid and progressive adoption of a new type of power over a comparatively short time span.

Table 12—Locomotive Utilization

Year	Steam Locomotives	Diesel-electric	Electric & Other
Freight Service (Gross Ton-miles Cars & Contents)			
1952 (10 mos.)	33.23%	64.87%	1.90%
1951	45.50	52.66	1.84
1950	53.91	44.13	1.96
1949	63.05	34.89	2.06
1948	76.70	21.27	2.03
1947	85.57	12.37	2.06
1944	94.56	3.59	1.85
Passenger Service (Passenger-train Car-miles)			
1952 (10 mos.)	22.39%	70.98%	6.63%
1951	30.89	62.73	6.38
1950	36.31	57.30	6.39
1949	44.25	49.29	6.46
1948	53.92	39.55	6.53
1947	66.29	27.23	6.48
1944	85.87	8.00	6.13
Yard Service (Locomotive-Hours)			
1952 (10 mos.)	22.58%	76.15%	1.27%
1951	30.97	67.79	1.24
1950	38.20	60.45	1.35
1949	47.83	50.77	1.40
1948	61.75	36.95	1.30
1947	67.00	31.75	1.25
1944	77.31	21.32	1.37

Member lines of the Associaton of American Railroads, at their annual meeting in New York on November 21, reaffirmed their program calling for a freight car ownership by Class I railroads of 1,850,000 cars. Realization of this goal, originally adopted on July 28, 1950, has been delayed because of inability to obtain government allocations of sufficient supplies of materials. A resolution adopted at the November meeting pledged individual railroads to support such a program of car buildings as will attain the goal of 1,850,000 cars by December 31, 1954, the earliest possible date under current and prospective conditions of materials supply.

Based on an assumed retirement of 5,000 cars per month, projection of the freight car program from October 1, 1952, may be summarized as follows:

	Freight cars
Goal—Class I ownership	1,850,000
Ownership on Oct. 1, 1952	1,756,544
Net increase required	93.456

It was pointed out at the association's meeting that to realize the goal, construction of approximately 228,456 freight cars in the 27-month period from October 1, 1952, December 31, 1954, would be required, of which 135,000 would replace equipment retired, while the remaining 93,456 would close the gap between current ownership and the goal of 1,850,000 cars. As of October

high level of expenditures since the war is due in part to much higher price levels, but also reflects the extensive improvement program under way during most of that period.

About 71.5 per cent of the 1952 expenditures was allocated to equipment and the remaining 28.5 per cent to roadway and structures. This apportionment indicates the continued emphasis on new equipment, especially diesel-electric locomotives and freight cars.

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But in 1949, diesel-powered engines performed slightly more than half (50.8 per cent). This ratio increased to 60.5 per cent in 1950, and again to 67.8 per cent in 1951. For the first 10 months of 1952, diesel power performed 76.1 per cent of all yard locomotive-hours, compared with 22.6 per cent for steam locomotives and 1.3 per cent for electric and other locomotive types. Utilization of steam and diesel power in yard service was practically reversed between 1944 and 1952—a short eight-year period.

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Year	Steam Locomotives	Diesel-electric	Electric & Other
Freight Service (Gross Ton-miles Cars & Contents)			
1952 (10 mos.)	33.23%	64.87%	1.90%
1951	45.50	52.66	1.84
1950	53.91	44.13	1.96
1949	63.05	34.89	2.06
1948	76.70	21.27	2.03
1947	85.57	12.37	2.06
1944	94.56	3.59	1.85
Passenger Service (Passenger-train Car-miles)			
1952 (10 mos.)	22.39%	70.98%	6.63%
1951	30.89	62.73	6.38
1950	36.31	57.30	6.39
1949	44.25	49.29	6.46
1948	53.92	39.55	6.53
1947	66.29	27.23	6.48
1944	85.87	8.00	6.13
Yard Service (Locomotive-Hours)			
1952 (10 mos.)	22.58%	76.15%	1.27%
1951	30.97	67.79	1.24
1950	38.20	60.45	1.35
1949	47.83	50.77	1.40
1948	61.75	36.95	1.30
1947	67.00	31.75	1.25
1944	77.31	21.32	1.37

Member lines of the Associaton of American Railroads, at their annual meeting in New York on November 21, reaffirmed their program calling for a freight car ownership by Class I railroads of 1,850,000 cars. Realization of this goal, originally adopted on July 28, 1950, has been delayed because of inability to obtain government allocations of sufficient supplies of materials. A resolution adopted at the November meeting pledged individual railroads to support such a program of car buildings as will attain the goal of 1,850,000 cars by December 31, 1954, the earliest possible date under current and prospective conditions of materials supply.

Based on an assumed retirement of 5,000 cars per month, projection of the freight car program from October 1, 1952, may be summarized as follows:

	Freight cars
Goal—Class I ownership	1,850,000
Ownership on Oct. 1, 1952	1,756,544
Net increase required	93.456

It was pointed out at the association's meeting that to realize the goal, construction of approximately 228,456 freight cars in the 27-month period from October 1, 1952, December 31, 1954, would be required, of which 135,000 would replace equipment retired, while the remaining 93,456 would close the gap between current ownership and the goal of 1,850,000 cars. As of October

high level of expenditures since the war is due in part to much higher price levels, but also reflects the extensive improvement program under way during most of that period.

About 71.5 per cent of the 1952 expenditures was allocated to equipment and the remaining 28.5 per cent to roadway and structures. This apportionment indicates the continued emphasis on new equipment, especially diesel-electric locomotives and freight cars.

Purchases of fuel, material and supplies in 1952 are estimated at $1,900 million, a decrease of $276 million under 1951. The decline in purchases in 1952 was due in part to the reduced level of operations during the year, and in part to retarded deliveries in new rail and other steel products during and following the steel strike.

Table 10—Capital Expenditures and Purchases

Year	Gross capital expenditures (thousands)	Purchases of fuel, material and supplies (thousands)
1952 (est.)	$1,332,630	$1,900,000
1951	1,413,971	2,175,859
1950	1,065,842	1,739,908
1949	1,312,200	1,641,406
1948	1,273,484	2,183,331
1947	864,689	1,909,209
1946	561,957	1,570,555
1945	562,980	1,572,404
1944	560,112	1,610,529
1943	454,282	1,394,281

Table 11 shows railroad ownership of equipment at the end of each year 1946 to 1951, and as of December 1, 1952. New equipment on order at the end of each year or period is also shown, together with annual installations.

Table 11—Equipment Ownership and Installations

Class I Railroads

	Ownership at end of year	Installed during year	On order at end of year
Steam locomotives:			
1952 (Dec. 1)	16,231	*17	17
1951	21,200	18	19
1950	25,265	12	16
1949	28,809	57	13
1948	32,613	86	72
1947	34,800	72	30
1946	37,255	83	64
Diesel and electric locomotives: a			
1952 (Dec. 1)	15,168	*2,227	777
1951	13,017	2,540	1,720
1950	10,531	2,384	1,628
1949	8,169	1,808	885
1948	6,368	1,401	1,561
1947	4,964	771	1,196
1946	4,222	480	540
Freight-carrying cars: b			
1952 (Dec. 1)	1,755,742	*58,045	72,400
1951	1,751,731	84,218	104,831
1950	1,717,659	39,872	109,174
1949	1,749,736	78,876	12,861
1948	1,754,840	96,204	84,161
1947	1,731,231	57,031	99,216
1946	1,739,930	39,299	54,778

* 11 months.

a Includes 6 gas turbine-electric locomotives installed and 19 gas turbine-electric locomotives on order by the Union Pacific.

b These are statistics for Class I railroads, excluding railroad owned private refrigerator car lines. Including such lines, installations for the first 11 months of 1952 would be 61,110 cars, and the number on order December 1 would be 75,017 cars.

Locomotives. Ownership of steam locomotives continued to decline in 1952, whereas ownership of diesel-electric locomotives maintained its sharp upward trend.

During the seven postwar years, 1946 to 1952 (December 1), ownership of steam locomotives showed a net decrease of 22,452, electric locomotive ownership decreased by 77 (84 units), but there was a net increase of 11,515 diesel-electric locomotives (16,532 units). These figures do not take into account either the tractive power or relative efficiency of the different types of motive power. Actually, average tractive force for each type of locomotive (as operated) has increased as follows, comparing December 1, 1952, with the beginning of 1946:

Type of locomotive	Average tractive force per locomotive as operated (lb.) Dec. 1, 1952	Jan. 1, 1946	Per cent increase
Steam	60,092	53,608	12.1
Diesel-electric	83,150	73,126	13.7
Electric	66,484	63,706	4.4

Locomotives on order as of December 1, 1952, totaled 794 (911 units), of which 748 (865 units) were diesel-electric. A total of 2,244 locomotives (2,865 units) were installed during the first eleven months of 1952, the second greatest total for any comparable period in the last quarter century. Diesel-electric units comprised 2,840 of the total 2,865 units.

The proportion of unserviceable locomotives (steam, electric, and diesel) was reduced in 1952. The bad order ratio increased slightly from 8.5 per cent on January 1, to the year's high of 8.6 per cent on March 1. From that point, the trend was steadily downward, being only 6.8 per cent on December 1. This was the lowest unserviceable ratio since March 1, 1949. The average unserviceable ratio for the first eleven months of 1952 was 7.7 per cent, compared with an average of 9.3 per cent for the year 1951.

Freight Cars. Installations of new freight cars by Class I railroads totaled 58,045 for the first 11 months of 1952. Installations for the year will approximate 63,000, compared with 84,218 cars in 1951.

Car builders were hard hit by the steel strike. Steel allocations were sharply curtailed, and delivery of new freight cars fell to a fraction of the 10,000-car-per-month program set up in 1950. For the first eleven months, freight car installations by Class I railroads barely kept ahead of the 54,034 retirements.

Freight car ownership of Class I railroads on December 1 numbered 1,755,742, an increase of 4,011 cars over their ownership at the end of 1951. The trend was upward month by month through June, when ownership (July 1) numbered 1,764,060 cars. After that date ownership (July 1) numbered 1,764,060 cars. After that date ownership declined each month until a slight gain was recorded for November. For the first six months of the year new freight car installations exceeded retirements by 12,329 cars. During the five months July to November, retirements exceeded new installations by 8,318 cars.

The decline in freight car ownership which set in after July 1 marked the end of a 20-month period of gradually increasing ownership which began in December 1950, and was interrupted only once—in July 1951—when freight car production was sharply reduced by strikes and floods.

The proportion of unserviceable freight cars fluctuated in 1952 between a low of 5.0 per cent on February 1 and March 1, and a high of 6.1 per cent on August 1. The ratio was reduced to 5.2 per cent on December 1. It averaged 5.4 per cent for the eleven-month period, compared with an average of 5.1 per cent for 1951.

Freight car shortages were smaller in 1952 than in

1951, in part because of lowered traffic volume. The first half of the year showed the greatest reduction. The maximum daily shortage of freight cars was reported for the week of September 27, at 18,558 cars. This was reduced to 709 for the week of December 13. The maximum for 1951 was 37,828 cars, for the week of March 3.

Passenger Equipment. Railroad ownership of passenger-train cars of steel or steel underframe construction numbered 36,416 on June 30, 1952. This was a reduction of 799 cars from the end of 1951. New passenger-train equipment of all types installed during the first six months of 1952 totaled 46 units, and 153 units were on order as of July 1. This compares with 139 units on order a year earlier, on July 1, 1951, and 152 units on order as of January 1, 1952.

The Diesel Upsurge

Rapidly increasing use of diesel-electric motive power since 1944 has been one of the highlights of postwar railroad operations. In 1944 only 3.6 per cent of gross ton-miles (freight cars and contents) were handled by diesel power, while 94.6 per cent were handled by steam locomotives. The spread between services performed by these two types of motive power narrowed in each succeeding year and in 1951 freight gross ton-miles performed by diesel power exceeded that of steam locomotives for the first time. In the first ten months of 1952, diesel-electric locomotives handled 64.9 per cent of freight gross ton-miles, compared with 33.2 per cent for steam locomotives and 1.9 per cent for electric and other locomotives.

A similar trend has taken place in passenger service. In 1944, only 8.0 per cent of all passenger-train car-miles were handled by diesel power, while steam locomotives handled 85.9 per cent. Five years later, in 1949, diesel power handled nearly one-half of all passenger-train car-miles, while those handled by steam locomotives were down to 44.3 per cent. In 1950, the diesel-electric proportion of passenger-train car-miles rose to 57.3 per cent of the total, and rose further to 62.7 per cent in 1951. For the first ten months of 1952, diesel power hauled 71.0 per cent of all passenger-train car-miles, steam locomotives handled 22.4 per cent, electric and other types of locomotives handling the remaining 6.6 per cent.

Use of diesel-electrics in yard service began earlier and on a more extensive scale than in the case of either of the two road services. The small, compact diesel unit with its high percentage of availability proved suitable for switching cars in congested yard areas. In 1944, 21.3 per cent of all yard locomotive hours was performed by diesel power, and 77.3 per cent by steam locomotives.

But in 1949, diesel-powered engines performed slightly more than half (50.8 per cent). This ratio increased to 60.5 per cent in 1950, and again to 67.8 per cent in 1951. For the first 10 months of 1952, diesel power performed 76.1 per cent of all yard locomotive-hours, compared with 22.6 per cent for steam locomotives and 1.3 per cent for electric and other locomotive types. Utilization of steam and diesel power in yard service was practically reversed between 1944 and 1952—a short eight-year period.

Table 12 gives the percentage utilization of steam, diesel-electric and other types of motive power in freight, passenger and yard services for 1944, and the years 1947 to date. Entries for 1952 are for the first 10 months.

Chart E outlines the upward trends since 1940, up to the first 10 months of 1952, in the proportionate utilization of diesel power in the three principal services: Freight, passenger, and switching. That proportion was less than 10 per cent for all three services in 1940, but ranged between 65 and 76 per cent for the respective services in 1952, a striking story of the rapid and progressive adoption of a new type of power over a comparatively short time span.

Table 12—Locomotive Utilization

Freight, Passenger & Yard Services

Year	Steam Locomotives	Diesel-electric	Electric & Other
Freight Service (Gross Ton-miles Cars & Contents)			
1952 (10 mos.)	33.23%	64.87%	1.90%
1951	45.50	52.66	1.84
1950	53.91	44.13	1.96
1949	63.05	34.89	2.06
1948	76.70	21.27	2.03
1947	85.57	12.37	2.06
1944	94.56	3.59	1.85
Passenger Service (Passenger-train Car-miles)			
1952 (10 mos.)	22.39%	70.98%	6.63%
1951	30.89	62.73	6.38
1950	36.31	57.30	6.39
1949	44.25	49.29	6.46
1948	53.92	39.55	6.53
1947	66.29	27.23	6.48
1944	85.87	8.00	6.13
Yard Service (Locomotive-Hours)			
1952 (10 mos.)	22.58%	76.15%	1.27%
1951	30.97	67.79	1.24
1950	38.20	60.45	1.35
1949	47.83	50.77	1.40
1948	61.75	36.95	1.30
1947	67.00	31.75	1.25
1944	77.31	21.32	1.37

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Based on an assumed retirement of 5,000 cars per month, projection of the freight car program from October 1, 1952, may be summarized as follows:

	Freight cars
Goal—Class I ownership	1,850,000
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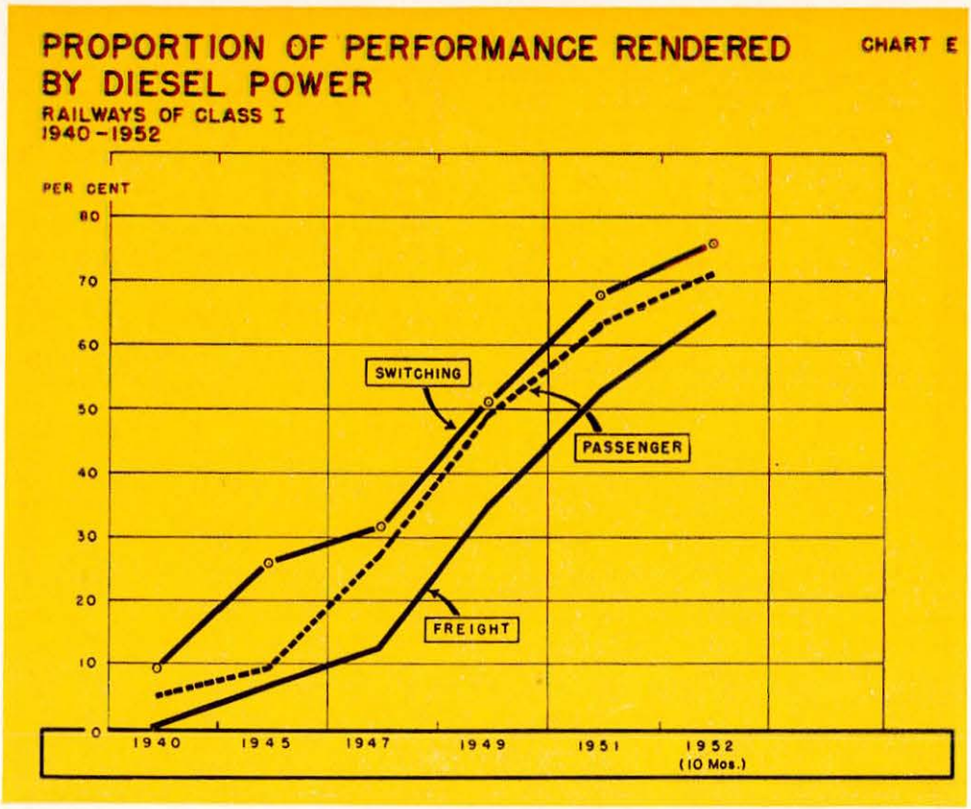
It was pointed out at the association's meeting that to realize the goal, construction of approximately 228,456 freight cars in the 27-month period from October 1, 1952, December 31, 1954, would be required, of which 135,000 would replace equipment retired, while the remaining 93,456 would close the gap between current ownership and the goal of 1,850,000 cars. As of October



1, 1952, Class I railroads had 75,136 freight cars on order, leaving a balance of 153,320 cars to be ordered at a later date.

During October and November further orders were placed for 6,740 cars.

Defense Transport Administrator Knudson on November 25 commended the A.A.R. for continuing its freight-car building program, and assured the association that his agency would persist in active efforts to get needed materials. He expressed the hope that construction of 10,000 new cars per month could be attained within a year.

Administrator Knudson had previously (April 8 and November 13) outlined programs for freight car construction designed to reach the goal originally set by the railroads in 1950 as their target. His studies are summarized in the section of this review dealing with the Defense Transport Administration.

The next four tables compare significant performance averages for the first 10 months of 1952 with annual averages for the years 1942 to 1951.

Although traffic volumes in 1952 were not so great as in 1951, nor in the war years, operating averages moved upward to new records in nearly every case, indicating continued progress in operating efficiency.

Ton-miles per freight train-hour, combining both load and speed factors, is a highly significant performance factor.

The unit output for an hour of freight train operation is computed on two bases: (1) gross ton-miles of cars and contents per freight train-hour, and (2) net ton-miles (lading only) per freight train-hour. Both averages are shown in Table 13. Statistics for the first 10 months of 1952 indicate that new records for each of the two averages were set for the sixth consecutive year.

Table 14 shows daily mileage averages for locomotives and freight cars, 1942 to 1952. The 1952 performance for locomotives was a record, both in freight and passenger service. Active freight locomotives during the first 10 months averaged 126.2 miles per day, 3.0 per cent above the year 1951, and 1.4 per cent higher than the average for the previous record year, 1943. Active passenger locomotives averaged 265.1 miles per day during the first 10 months, an increase of 7.5 per cent over the year 1951, also setting a new record.

Serviceable freight cars averaged 46.1 miles per day during the first 10 months of 1952. This was somewhat

Table 13—Ton-Miles per Freight Train-Hour—1942-1952

Year	Gross ton-miles	Net ton-miles
1952 (10 mos.)	48,938	22,521
1951	46,424	21,767
1950	44,352	20,343
1949	42,346	19,024
1948	39,903	18,778
1947	38,462	18,126
1946	37,057	17,173
1945	36,954	17,482
1944	37,298	17,623
1943	35,970	16,997
1942	35,503	16,132

Table 14—Daily Mileage of Locomotives and Freight Cars

Year	Active freight locomotives	Active passenger locomotives	Serviceable freight cars
1952 (10 mos.)	126.2	265.1	46.1
1951	122.5	246.5	47.2
1950	119.3	237.2	46.5
1949	112.5	228.5	42.9
1948	116.8	220.9	47.2
1947	120.3	219.0	48.8
1946	115.9	221.8	45.2
1945	118.4	226.9	49.3
1944	122.8	222.9	51.9
1943	124.5	220.9	51.0
1942	122.4	206.8	48.8

Table 15—Average Train Speed (m.p.h.)—1942-1952

Year	Freight trains	Passenger trains
1952 (10 mos.)	17.5	38.3
1951	17.0	37.7
1950	16.8	37.4
1949	16.9	37.0
1948	16.2	36.7
1947	16.0	36.1
1946	16.0	35.5
1945	15.7	34.7
1944	15.7	34.8
1943	15.4	34.7
1942	15.8	35.7

Table 16—Average Train and Car Loads—1942-1952

Year	Freight Service: Net tons per train	Freight Service: Net tons per car	Passenger Service: Passengers per train	Passenger Service: Passengers per car
1952 (10 mos.)	1,299	32.5	*100.4	*18.3
1951	1,301	33.0	97.5	18.1
1950	1,224	31.7	88.8	17.0
1949	1,138	31.4	92.3	18.1
1948	1,176	32.9	101.1	19.4
1947	1,146	32.6	110.7	21.0
1946	1,086	31.3	144.3	24.5
1945	1,129	32.2	190.5	30.2
1944	1,139	32.7	200.7	31.9
1943	1,116	33.3	189.5	31.1
1942	1,035	31.8	125.5	23.1

*Nine months.

below the average for the year 1951, but the average for the year 1952 is expected to be somewhat higher than for the first 10 months.

Train speeds, which declined during the war years, have since more than regained those reductions. Averages for the years 1942 to 1952 (10 months) are shown in Table 15.

Average freight train speed during the first 10 months of 1952 increased five-tenths of a mile over the year 1951. Passenger train speed increased six-tenths of a mile for the same period. It seems likely that when statistics are available for the whole of 1952, new records will have been established for both these factors of efficiency.

Table 16 shows average load per train and per car in both freight and passenger services, 1942 to 1952. Average load per train and per car in freight service declined for the first 10 months of 1952, compared with the year 1951. These averages were adversely affected by the midsummer steel strike, and those for the whole year 1952, when available, will doubtless be higher. In passenger service, average occupancy per train and per car both increased during the first 10 months of 1952.

Railroads in 1952 continued their steady and, in many respects, spectacular reduction in accidents and resulting casualties to persons. In the first 10 months of 1952, fatalities to persons of all classes in railroad accidents of all kinds were reduced 10.5 per cent below the same period of 1951, while non-fatal injuries decreased 13.0 per cent. Fewer persons lost their lives in railroad accidents in the first 10 months of 1952 than in the corresponding period of any of the sixty-five years for which records are available.

Railroads established a noteworthy passenger safety record in the first 10 months of 1952. No passengers lost their lives in collisions, derailments or other train accidents in that period. The all-time record for a full calendar year up to 1952 was established 20 years earlier, in 1932, when only one passenger fatality occurred in train accidents.

There were 12 passenger fatalities in so-called train-service accidents in the first 10 months of 1952, compared with 15 in the same period of 1951. Train-service accidents arise largely from negligence on the part of passengers themselves, such as attempting to get on or off moving trains.

The generally downward trend of recent years in highway grade crossing accidents continued in 1952. Notwithstanding the increased number of motor vehicles on the highways, fatalities to persons in accidents at railroad-highway crossings decreased 8.7 per cent in the first 10 months of 1952, and non-fatal injuries declined 10.7 per cent.

There was little change in the 1952 period in fatalities to employees, there being 2 fewer than in the same 1951 period. Non-fatal injuries to employees declined 11.6 per cent.

On the whole, a gratifying record of railroad accidents and resulting casualties was made for the first 10 months of 1952. The railroads take pride, and rightly so, in the great strides they have made over the years in the field of safety.

Volume of Accelerated Amortization Certificates. The Defense Production Administration announced on October 27 that through September 5, 1952, railroads had been granted 911 certificates of necessity for accelerated tax amortization of facilities, involving gross expenditures of $2,906,316,000. Between September 5 and November 19, some 129 additional certificates were issued, involving gross expenditures of $120,814,000. Thus certificates issued to November 19 aggregated $3,027,130,000.

Of this gross total, $1,907,401,000, or 63.0 per cent, was approved for accelerated amortization. The percentages so approved ran generally lower in 1952 by 10 percentage points than previously; the freight car percentage was reduced from 80 per cent of total cost to 70 per cent, and the locomotive percentage from 65 per cent to 55 per cent. Other facilities were approved at various percentage rates, generally in a 40 to 50 per cent range.

A.A.R. Enlarges Research Facilities. The board of directors of the Association of American Railroads on June 27 authorized construction of another building at the A.A.R. Central Research Laboratory in Chicago. The new building, costing approximately $350,000, is part of an enlarged program of railroad research. Its laboratory space will be devoted primarily to expanded mechanical research. Completion of the project is anticipated in 1953.

Per Diem Rate Increased. Railroad subscribers to the Car Service Rules voted to increase the per diem rate for rental of railroad freight cars from $1.75 to $2.00, effective May 1.

"Reefer" Rentals Raised. Increases in refrigerator car mileage rates paid by railroads were approved in November by letter ballot of subscribers to the Bulwinkle Act agreement covering such charges. Effective January 1, 1953, the rate on general-purpose "reefers" advanced from 3 cents per mile to 3.5 cents, and on the RB type from 2.5 cents to 3.2 cents.

Pan American Railway Congress to Meet in 1953. Latin American countries have been invited by the United States Government to send delegates to the Eighth Pan American Railway Congress, to be held in the United States in June 1953. In a letter of invitation addressed

to the heads of 20 countries, the Department of State said that the congress will convene in 1953 in Washington from June 12 to 20, and in Atlantic City, N. J., from June 21 to 25. Approximately 300 technical papers on railroads and railroading are expected to be presented in the course of the meetings.

British Railways. The experience of the first five years of nationalization of Great Britian's surface transport (1948-1952) has been disillusioning, when operations of the system as a whole are considered. This has taken place despite the fact that British railways earned a small net income in 1951, and possibly in 1952. Substantial deficits were incurred by the railways during the first three years of nationalization. Four increases in railway freight rates, aggregating 48 per cent, have been made since 1948, the latest one on December 1, 1952. Coupled with previous increases (1939-1947), the current level of freight rates is 130 per cent above that of prewar. Passenger fares average about 77 per cent higher than prewar levels.

Trends in British railway operations, 1952 compared with 1951, are similar to those of United States railroads; gross receipts up and traffic volume down. In Britain, revenues increased as a result of higher rates, while traffic losses are traceable largely to a decrease in the amount of high-rated merchandise traffic carried. Comparison of operating results for the first 40 weeks of 1952, with those of the corresponding period of 1951, shows the following trends:

	Per cent		Per cent
Gross receipts	I 7.2	Tons originated	D 0.3
Carloadings	D 1.8	Net ton-miles	D 2.1
Freight-train miles	D 0.6	Passenger-train miles	D 0.3
Freight-train hours	D 5.0	Passengers originated	D 0.4

As the year closed, Parliament had under consideration and debate a bill introduced by the government proposing to denationalize the truck operations now conducted by the government, and to decentralize the government operations of British railways.

Railroad Retirement. The number of beneficiaries on the retirement rolls of the Railroad Retirement Board, as well as benefit disbursements to them, rose sharply in 1952. The increase in number of beneficiaries was due in large measure to the newly added benefits payable to spouses (age 65 or over) of retired employees provided under the October 1951 amendments to the Railroad Retirement Act. The increase in benefits disbursements further reflected also approximate increases of 15 per cent in all retirement benefits, and one-third in all survivor annuities, also provided by the 1951 amendments.

Beneficiaries on the retirement rolls as of October 31, 1952, numbered 510,330, compared with 414,464 on the corresponding date in 1951, an increase of 95,866. The 1952 total comprised 263,527 retirement annuitants, 5,404 pensioners (persons transferred from the voluntary rolls of the carriers in 1937), 155,790 recipients of survivor annuities, and 85,609 spouse annuitants.

The increase of 95,866 beneficiaries in 1952 was accounted for by a net increase of 6,223 in the number of retirement annuities, a net increase of 5,218 in the number of survivor annuities, a decrease of 1,184 in the number of pensioners by reason of deaths in that group, and the addition of 85,609 spouse annuities.

Total retirement benefits in the month of October 1952 aggregated $37,170,899, compared with $27,416,313 in October 1951. Thus the annual level of disbursements rose during the 12-month period from $328,996,000 to $446,051,000, an increase of 35.6 per cent.

Despite a moderate decline in railway employment and payrolls, 1952 under 1951, payroll tax accruals for railroad retirement rose slightly. For the first ten months of 1952, such accruals of Class I railways amounted to $225,032,000, compared with $221,159,000 for the corresponding period of 1951, an increase of 1.8 per cent. Similar amounts were paid by rail employees. This increase in the retirement tax in 1952 was due to the increase in the payroll tax rate for retirement purposes, which on January 1, 1952, was raised from 6 per cent each on employers and employees to 6¼ per cent each.

The following summarizes the financial operations of the railroad retirement system from its inauguration in 1937 to October 31, 1952.

Receipts:		
From U. S. Treasury	$5,512,130,244	
Interest on investments	388,509,925	
Total		$5,900,640,169
Disbursements:		
Benefit payments	$2,961,946,511	
Transferred to administration account (net)	18,093,308	
Total		$2,980,039,819
Balance as of October 31, 1952		$2,920,600,350

Administrative expenses for the entire period of operation to October 31, 1952, amounted to $59,216,588. The amount of $18,093,308 shown in the foregoing table as transferred to the administration account covers the period since July 1949. Prior to that date, amounts appropriated for administrative expenses were credited to a separate account and expenses were charged directly to that account.

Railroad Unemployment Compensation. Payments of unemployment compensation benefits greatly increased in 1952. Benefit disbursements during the first ten months of 1952 aggregated $34,793,777, compared with $16,562,665 during the corresponding period of 1951. This increase reflected the increased unemployment of railway workers brought about largely by the steel strike in June and July. It also reflected the increased scale of benefits, which under the 1951 amendments to the Railroad Unemployment Insurance Act became effective for the benefit year beginning July 1, 1952.

	1951	1952	Per Cent increase
January—May	$10,666,065	$12,037,678	12.9
June—October	5,896,600	22,756,099	285.9
January—October	16,562,665	34,793,777	110.1

The peak level of disbursements for the year was reached in August, when payments aggregated $7,765,316 compared with $1,494,533 for August 1951.

Sickness and Maternity. Benefit disbursements for sickness and maternity in 1952 declined slightly below the levels of 1951 during the first six months of the year. The increased scale of benefits effective July 1, however, was manifested in heavier disbursements for subsequent months. Sickness benefits for the first ten months of 1952 aggregated $24,413,318 compared with $19,797,892 for the corresponding period of 1951. Maternity benefits, which aggregated $1,732,684 during the first 10 months of 1951, increased to $1,913,798 during the same period of 1952.

Unemployment Taxes and Finances. Unemployment tax accruals by railways of Class I for the first ten months of 1952 amounted to $17,995,805, compared

with $18,429,946 for the corresponding period of 1951. Since the current tax rate (0.5 per cent) prevailed during both 1951 and 1952, the decrease for 1952 reflects the reduction in employment.

Under the sliding scale of payroll taxes now in effect, the tax rate for any year will remain at 0.5 per cent so long as the railroad unemployment reserve amounts to $450,000,000 or more on September 30 of the preceding calendar year. The balance as of September 30, 1952, was $736,753,152, thus assuring continuation of the 0.5 per cent rate through 1953. This balance compared with $767,733,414 as of September 30, 1951.

Financial results of operation of the railroad unemployed insurance system for the entire period of operation from July 1, 1939, to October 31, 1952, are summarized below.

Receipts:		
Taxes (Incl. transfers from states)	$1,168,135,691	
Interest on unemployment reserve fund ..	156,155,305	
Total receipts		$1,324,290,996
Disbursements:		
Benefit disbursements (net)		
Unemployment	$ 372,647,768	
Sickness (excl. maternity)	142,270,218	
Sickness (maternity)	10,767,366	
Administrative expenses	60,507,039	
Total disbursements		$ 586,192,391
Balance:		
To credit of unemployment reserve	$ 731,569,218	
To credit of administration fund	6,529,287	
Total balance, Oct. 31, 1952		$ 738,098,605

Chairman Kennedy Reappointed. The Senate on May 28 confirmed the nomination of William J. Kennedy for reappointment as Chairman of the Railroad Retirement Board for a term of five years from August 29, 1952.

Changes in Commission Membership and Organization. Important changes in the personnel of the commission occurred in 1952. Commission Chairman John L. Rogers resigned from service on April 30 because of ill health. A native of Tennessee, he had served with the commission for more than 35 years, as a staff member, as director of the Bureau of Motor Carriers, and for the final 15 years as a commissioner.

Commissioner Clyde B. Aitchison, a native of Iowa, retired from the commission on July 11, after serving nearly 35 years as a member, and several times as chairman. His service on the commission exceeded that of any other man who has ever occupied a seat on that body.

Commissioners Charles D. Mahaffie and J. Hayden Alldredge were reappointed by the President, January 10, for seven-year terms, expiring December 31, 1958. The Senate confirmed the appointment of Commissioner Alldredge on January 24, and that of Commissioner Mahaffie on July 1.

On June 17, the President sent to the Senate appointments of two new members of the commission, Martin Kelso Elliott of Indiana and Anthony F. Arpaia of Connecticut. These appointments were confirmed by the Senate on July 1. Mr. Elliott's appointment was for the remainder of Commissioner Aitchison's term, expiring December 31, 1956. Mr. Arpaia succeeded Commissioner Rogers, and his appointment was for the remainder of Mr. Rogers' term, expiring December 31, 1957.

Commissioner Alldredge was elected chairman of the commission for one year beginning May 1.

Secretary of the Commission W. P. Bartel retired from service on August 31, 1952, after more than 46 years with the commission, whose staff he joined in 1906, and of which he became secretary in 1937. The commission appointed George W. Laird as acting secretary, effective September 1. Mr. Laird had served as assistant secretary since March 1, 1936.

Government Reparation Cases. These cases comprise 17 complaints filed with the commission by the Department of Justice in which the government seeks to recover alleged overcharges by the railroads on various military shipments transported during World War II. Hearings were concluded before Division 4 of the commission on May 9, 1951. Comprehensive briefs were filed concurrently by the parties on March 18, 1952.

Rail-Barge Rate Order Postponed Indefinitely. Under date of January 23, the commission postponed "until further order of the commission" the effective date of its order of June 13, 1949, requiring railroads and water carriers on inland waterways to establish through routes and joint rates reflecting differentials under all-rail rates (Docket No. 26712). However, the commission in a report made public April 29, denied petitions filed by railroads and the Mississippi Valley Barge Line Company, seeking vacation of its rail-barge rate order.

Section 5a Developments. A commission order, dated February 6, gave final approval to the Illinois Freight Association agreement, with the modifications called for by the commission's report of August 17, 1951, and set March 24, 1952, as the effective date. The Illinois application was No. 21, filed under provisions of the Reed-Bulwinkle Act, which became Section 5a of the Interstate Commerce Act.

Similarly, the rate pact of the Southern Freight Association *et al* (Sec. 5a application No. 6), modified as required by the commission, was approved on July 14.

During the year four additional applications were filed, none of them involving railroads or railroad organizations. This brings the total of such applications to 41 since the Reed-Bulwinkle Act became effective. Only nine of the 41 applications were on behalf of railroad organizations, the remaining 32 being largely filed by motor carrier groups.

Commodity Statistics by Areas Discontinued. The commission announced on February 6 that the provisions of its order of November 8, 1951, which relieved railroads from filing reports of freight commodity statistics by geographic areas, would be put into operation, the effective date of the order having been postponed because of protests against discontinuance. These protests were denied by the commission on February 4. Reports involved were quarterly returns and annual summaries (Form SCS, and Schedule 541A of Annual Report Form A). Annual savings to the railroads from elimination of these requirements are estimated at $172,500.

Abandonment of Express Service Ruling. Abandonment of express service is not subject to commission jurisdiction, according to a decision of Division 2, rendered June 27, 1952. Such abandonment of service, the division held, is similar to and comparable with elimination of passenger train service. The proceedings involved tariffs of the Railway Express Agency which proposed to eliminate three Indiana stations from the list of places at which express agencies are maintained.

Truck Trip-Leasing Regulations Challenged. The commission on May 8, 1951, prescribed rules and regulations governing the leasing and interchange of motor

vehicle equipment, the original effective date being August 1, 1951. Motor carrier interests applied to the courts to have the commission's order nullified. Pending outcome of that litigation, the commission has postponed the order's effective date from time to time. Following lower court rulings upholding the commission's action, the matter was appealed to the Supreme Court, where argument was heard November 17 and 18, 1952. Decision has not yet been rendered.

I. C. C. Appropriation for Fiscal 1953. The Independent Offices Appropriation Bill, approved July 5, carried an appropriation of $11,003,500 for the commission for the fiscal year ending June 30, 1953. This compares with $11,778,000 recommended in the President's budget, and with $10,474,535, the corresponding appropriation for fiscal 1952. Of the $11,003,500 appropriated for 1953, $9,319,500 is for "general expenses," a budgetary grouping which embraces most of the commission's activities; $974,500, for railroad safety; and $709,500 for locomotive inspection.

The second session of the 82nd Congress convened on January 8, 1952, and adjourned "sine die" on July 7. The session was characterized by introduction of a large amount of legislation of interest to railroads, but actual enactment of comparatively few measures. All bills upon which no final action was taken died with adjournment. The first session of the 83rd Congress convened on January 3, 1953.

Railroad Unemployment Insurance Act Amendments (Public Law 343). This act, approved May 15, liberalizes certain provisions of the Railroad Unemployment Insurance Act. For the old benefit schedule, which started with a daily benefit rate of $1.75 for base-year earnings ranging from $150 to $199.99 and ended with a daily benefit rate of $5 for base-year earnings of $2,500 and over, the new law substitutes a schedule starting with a daily rate of $3 for base-year earnings of from $300 to $474.99 and ending with a daily rate of $7.50 for base-year earnings of $3,500 and over. The new schedule thus eliminates all benefits for persons with base-year earnings below $300, but provides increases ranging from 30 to 60 per cent in benefits to persons with base-year earnings over $299.99. The average increase is estimated at from 40 to 45 per cent. The amendments became effective with respect to benefit years beginning on and after July 1, 1952.

Filing of Equipment Trust Agreements with I.C.C. (Public Law 556). This measure, approved July 16, amended Part I of the Interstate Commerce Act by providing in a new section of the act (section 20c) for filing with the commission equipment trust agreements and other documents evidencing or relating to the lease, mortgage, conditional sale, or bailment of railroad equipment. The commission is directed to "establish and maintain a system for the recordation of each such instrument or document, filed pursuant to the provisions of this section." Such recordation makes further recording unnecessary under any other law, federal, state, or local. Filing of such documents with the commission is not mandatory.

Railroad Retirement Study (S. Con. Res. 56). A joint Senate-House committee was created by S. Con. Res. 51 (October 17, 1951) to study operations of the Railroad Retirement Act and related matters. That resolution provided no funds for the study. This omission was cured by passage by Congress of S. Con. Res. 56 (Senate, March 26; House, April 9, 1952) which authorized expenditures by the joint committee of not to exceed $50,000. A hearing was held by the committee in August.

Motor Carrier Agricultural Exemption Broadened. (Public Law 472) Legislation, approved July 9, further eased the regulation of motor carriers by providing that horticultural commodities be included within the term "agricultural commodities" for the purpose of agricultural exemption for motor carriers. This law amends clauses (4a) and (6) of subsection (b) of Section 203, Part II of the Interstate Commerce Act.

Exemption Limits Raised for Motor Carrier Securities. (Public Law 492). Approved July 10, this law amends Section 214 of the Interstate Commerce Act by raising the maximum limits on securities which a motor carrier may issue without authority from the commission. For securities other than notes of a maturity of two years or less, the limit is raised from $500,000 to $1,000,000, and for such notes from $100,000 to $200,000.

Senate Study of I.C.C. Efficiency (S. Res. 332). The Senate on June 26 adopted S. Res. 332, authorizing the Senate Committee on Interstate and Foreign Commerce to investigate and study the organization of the Interstate Commerce Commission for the purpose of determining changes designed to promote its maximum efficiency. Expenditures for the study are limited to $50,000. The committee, which is required to submit its report by January 31, 1953, announced in August that it had engaged the Wolf Management Engineering Company of Chicago to make a study and investigation.

Presidential Emergency Powers Continued (H. J. Res. 477). Following prior action which had temporarily extended the so-called wartime or emergency powers of the President to June 30, 1952, Congress on July 3 passed H. J. Res. 477, which further extended 48 of the 60 such emergency powers until June 30, 1953. The resolution excluded any extension of the emergency authority of the President to seize and operate transportation systems. Under the 1916 Defense Act (10 U.S.C. 1361) this authority with respect to transportation is limited to times of war.

Defense Production Act Amendments (Public Law 429). This legislation, approved June 30, amends and extends the Defense Production Act of 1950. The measure continues wage and price controls to April 30, 1953. Controls administered by the Defense Transport Administration are extended to June 30, 1953, as is the authority by which Defense Production Administration allocates steel and other materials for freight cars, locomotives, etc. The Office of Price Stabilization will be in operation through April 30, 1953. Railroad rates and charges remain exempt from O.P.S. regulation.

Transportation Inquiry Extended by Senate (S. Res. 258). S. Res. 258, adopted by the Senate on January 24, extended the time for completion of an investigation into the transportation situation by the Senate Committee on Interstate and Foreign Commerce (S. Res. 50), until January 31, 1953.

Surface Transportation Bills. During the second session of the 82nd Congress, hearings were held by the Senate Committee on Interstate and Foreign Commerce on a group of some 37 bills pertaining to surface transportation.

Introduction of these measures resulted largely from that committee's study and investigation of land

and water transportation, in pursuance of the provisions of Sen. Res. 50.

Of the measures considered, eight were ordered favorably reported by the committee on May 28. Three of these were enacted into law, two of them (Public Laws 472 and 492) being concerned with motor carriers, while the third (Public Law 556) provides for filing by railroads with the commission of equipment trust agreements and similar documents.

Thus from the large grist of bills, designed to remedy some of the pressing difficulties which now plague the country's transportation system, there emerged a small amount of completed legislation.

St. Lawrence Waterway Project. Congressional action on this controversial project was confined in 1952 to the Senate, where hearings were held by the Senate Committee on Foreign Relations (February 25-29) on two pending measures (S. J. Res. 27 and S. J. Res. 111), calling for joint participation by the United States and Canada in construction of the St. Lawrence Waterway and Power Project. The committee, by a vote of 9 to 4, reported S. J. Res. 27 without recommendation on April 22. The Senate voted, 43 to 40 on June 18, to recommit the measure to the committee. No further action was taken prior to adjournment, and no action of any sort on the project was taken by the House.

Another approach to the whole matter, developed in 1952, involves a Canadian plan to construct a somewhat restricted navigation project in Canadian territory, without participation by the United States. It appears, however, that that plan is dependent upon construction of the *power* project as a joint undertaking between the United States and Canada.

The State Department announced on June 30 that the United States had joined with Canada in seeking approval from the International Joint Commission of an agreement covering development of power in the International Rapids Section of the St. Lawrence river. This would involve construction of a large dam and power plant at Massena, N.Y., at an estimated cost of $400 to $600 million. It is not contemplated, however, that the United States would undertake the American share of the enterprise as a federal project. Instead, the development would be carried out by "entities" to be designated by the two governments.

After hearings, the International Joint Commission on October 29 granted the United States and Canada permission to proceed with the power project. Canada has announced that the Ontario Hydro-Electric Commission will construct the Canadian portion. The Power Authority of New York State has applied to the Federal Power Commission for a license to construct the United States portion. On December 3, the Federal Power Commission made public an engineering report by its Bureau of Power approving the New York Power Authority plan to join Canada in the project. Hearings by that commission on the application began on December 9.

Public Power and Water Corporation, of Trenton, N.J., also applied to the Federal Power Commission for a license for a hydro-electric project, substantially the same as the one proposed by the New York Power Authority, it was announced on December 5. Public Power, however, proposes to construct navigation features on the United States side of the project, which are excluded under the New York Power Authority proposal. The Federal Power Commission, in January 1951, denied a similar application by this company.

Following the approval by the International Joint Commission of the power project, the Canadian Government advised our State Department that it considers the 1941 agreement on joint Canada-United States construction of the St. Lawrence Waterway Project a dead issue.

Other Legislation. Other measures of interest to railroads which were considered by Congress, but which failed of final action, included a number of bills providing for separation of air mail pay from subsidy, and legislation designed to legalize certain so-called freight absorption practices.

Activities of the Defense Transport Administration (D.T.A.) during the second year of its existence (October 1, 1951-October 1, 1952) are summarized in its "Record of Operations," made public December 12.

In the field of railroad transport, D.T.A. concentrated on two major problems: (1) Efforts to secure from the Defense Production Administration (D.P.A.) and the National Production Authority (N.P.A.) allocation of sufficient materials to provide for desired expansion of the railroad plant, an undertaking which it has vigorously pushed but in which it has been only partially successful; and (2) development of ways and means to overcome the handicap to railroad transport resulting from lack of adequate materials for equipment production.

The D.T.A. report pointed out that because of decreased carloadings and car shortages in 1952, allocating authorities within the government took the position that on a short-range basis it was not necessary to allocate so much material to the freight car program as formerly. Thus after an allocation of material for 27,000 freight cars, including tank cars, in the fourth quarter of 1951, the program was successfully curtailed during the several quarters of 1952. Occurrence of the steel strike had an additional detrimental effect on materials allocations. The overall effect of this lack of adequate materials is shown by the fact that during the two years of D.T.A's existence, freight car ownership increased only slightly more than 2 per cent.

The D.T.A. program to overcome lack of sufficient equipment is designed to increase the efficiency of railroad operation, with emphasis on efficient use and equitable distribution of equipment and arrangements for emergency rerouting or diversion of traffic.

The program included such measures as heavier loadings of freight; long-range relocation of cars in advance of seasonal movements; prompt release of equipment by consignees; the so-called "clean car" campaign designed to eliminate unnecessary delays incident to switching cars to cleaning tracks; and reduction of bad-order ratios to low levels.

On April 8, 1952, D.T.A. announced the results of a study made by it of the freight-car situation. The study indicated a need for higher production goals and D.T.A. recommended a program calling for construction of 11,000 cars per month during the 21-month period, October 1, 1952—July 1, 1954, and for 11,875 cars per month during the ensuing year ending July 1, 1955. This program was subsequently approved by D.P.A.

The D.T.A. announced on November 13 that it had informed D.P.A. that reappraisal of the program indicated no change in the number of cars required, but that due to the steel strike and other factors production of

freight cars in 1952 had lagged so far behind schedule that the "target date" originally set at July 1, 1954 should be extended to October 1, 1954. No change was suggested in the 1954-55 schedule.

With respect to locomotives, the D.T.A. on October 1 approved an expansion goal calling for production of 15,000 locomotive units between January 1, 1950, and July 1, 1954. To meet that goal, the D.T.A. indicated that production at the rate of 936 units per quarter would be required commencing October 1, 1952, which would approximate the rate prevailing in 1951 when 3,619 units (905 per quarter) were produced. Doubt was expressed that this schedule would be fully met because of lack of materials.

The life of D.T.A. was extended until June 30, 1953, under provisions of legislation (Public Law 429) which amended and extended the Defense Production Act of 1950. The Supplementary Appropriation Bill, approved July 15, appropriated $2,200,000 to finance D.T.A. activities.

Commerce Department Research Program. Under Secretary of Commerce for Transportation Jack Garrett Scott made public on October 7 a tentative long-range program of transportation study and research. Its announced purpose is to assist the secretary of commerce in coordinating transportation policy within the executive branch of the government and providing leadership for the administration in the transportation field.

The studies are expected to provide a factual basis for recommendations by the secretary for proposed legislative and administrative action directed toward such objectives as establishment and maintenance of a privately owned, financially healthy and well coordinated transportation system, efficiently and economically operated; assurance of adequate modern transportation facilities for the needs of commerce and defense; recognition and preservation of inherent advantages of the various types of transportation; limitation of transport regulation to that which is clearly required by the public interest and administratively manageable; and imposition of charges upon users and beneficiaries of transportation facilities provided by government, in whole or in part, to the extent that such charges are fair and equitable.

Report on Railroad Passenger Deficit Problem. An 80-page report by a special committee of the National Association of Railroad and Utilities Commissioners, dealing with the Railroad Passenger Deficit Problem, was adopted by the association at its annual meeting in Little Rock, Ark., November 10-13. The special committee was created in 1949.

The principal conclusions of the report are summarized as follows:

1. Large and continuing deficits incurred by the railroads from operation of passenger train service constitute the railroad industry's most serious problem today.
2. Much of the passenger service deficit is attributable to transportation of such unremunerative traffic as mail, express, and shipments of milk and cream. This appears particularly true of express traffic. However, elimination of so-called head-end traffic would not eliminate the deficit; loss of revenue from such traffic would substantially increase the deficits of numerous local passenger trains.
3. The passenger deficit problem is caused by competition (some of which is subsidized by federal, state, and local governments); failure or inability of railroads to take effective steps to meet such competition; increased expenses which result partly from labor agreements and state labor laws which are not responsive to requirements of passenger service; and failure of regulatory bodies promptly to permit abandonment of unremunerative operations.
4. Some passenger service is currently producing net income and much other service is operated near the break-even point. A major portion of the deficits are incurred from the operation of certain trains at heavy losses.
5. The railroads have made numerous and substantial increases in passenger fares and in rates applicable to head-end traffic, but under present competitive conditions further increases in rates, fares, and charges cannot alone solve the passenger deficit problem.
6. In their effort to eliminate or reduce the passenger deficit the railroads have abandoned many unprofitable passenger trains, have purchased new passenger train equipment, have experimented with other means of increasing traffic and have made technological improvements designed both to reduce expense and increase the attractiveness of their service. Some railroads have been handicapped in their efforts to improve equipment by lack of capital funds.

Remedial measures recommended by the association include a revaluation of individual deficit passenger trains in the light of changes in mail pay and other rates; renewed effort by railroads to induce regulatory bodies to permit discontinuance of unprofitable passenger train operation; adoption by railroads of a more aggressive policy of improvement of passenger train service; conferences between labor and management looking toward substitution of more economical equipment and reductions in size of train crews. The association also went on record as favoring imposition of compensatory user charges on all forms of commercial passenger transport using roadways, airways, or other facilities constructed or maintained at public expense.

T.A.A. Report. A 225-page report, prepared by the Transportation Association of America, was released June 2.

This report, which deals with the national transportation policy, was distributed to association members, chairmen of its regional forums, and national and regional farm, trade, and civic organizations. A 30-page summary was sent to 25,000 organizations and individuals throughout the country, with a request for recommendations for consideration by the association.

After considering such comments and recommendations as are received, the association's directors will formulate a final report, which it is hoped to submit to Congress early in 1953.

The June report represents the result of nearly four years of study and analysis of some 40 basic transportation issues by approximately 300 men, organized into eight panels representing all forms of transportation, shippers, and investors.

Seatrain Case Dismissed. The United States District Court for the District of New Jersey on October 23 denied plaintiff's application for preliminary injunction, and dismissed the complaint, in a suit filed December 10, 1951, by Seatrain Lines, Inc., against certain eastern railroads and various railroad associations. The com-

plaint charged defendants with conspiring to prevent Seatrain's development in interstate commerce, and sought an injunction against the practices complained of.

In the suit, four railroads—Pennsylvania, Atlantic Coast Line, Louisville & Nashville, and Southern—were designated as "primary" defendants. The remaining roads and associations were designated secondary defendants.

Following the numerous pleadings, the court heard arguments on April 14 on the question of primary jurisdiction, and on application for preliminary injunction. In its decision of October 23 the court held, in effect, that the matters complained of fall within the jurisdiction of the I.C.C. and that the commission possesses both powers and facilities for handling them. Plaintiff has appealed the decision to the Supreme Court.

Seatrain on December 12 petitioned the commission to issue declaratory orders clearing up the uncertainties which it believes to exist regarding the commission's jurisdiction over the use of railroad freight cars by Seatrain in its waterline operations.

Eleven railroads had previously asked the commission, on April 3, to investigate the relationship between Seatrain and the railroads, for the purpose of working out a "definitive and overall solution" of the many interrelated problems involved.

Government Antitrust Suit Dismissed. This case was an antitrust proceeding instituted by the Department of Justice in 1944 against the Western Association of Railway Executives, Association of American Railroads, and certain defendant railroads and individuals. It was assigned to the United States District Court at Lincoln, Neb.

On December 5, 1952, western railroads and the A.A.R. filed a motion for dismissal of the Lincoln suit on the ground that the joint actions with respect to rates on which the complaint was largely based had been validated by passage of the Reed-Bulwinkle Act and by commission approval of railroad agreements developed under the provisions of that act. A like motion to dismiss was later filed by the government, and on December 19 the court entered an order dismissing the case without prejudice.

A Precedent Established

I.C.C. Power to Suspend New Rates Is Exclusive. The power to suspend new rates for the limited period authorized by the Interstate Commerce Act is vested exclusively in the Interstate Commerce Commission, and the courts are without power to review the exercise of that administrative discretion, according to a decision rendered by the United States District Court for the Southern District of New York, September 30, 1952, in the case of *Carlsen v. United States et al.*

In this case, following the filing of new rate schedules by four interstate bus carriers, the plaintiff (a patron) protested the schedules and requested the commission to suspend the proposed rates pending determination of their reasonableness. The commission decided against suspensions and set the matter down for hearing and decision. Plaintiff then sought an order from the court to compel the commission to suspend the schedules pending such hearing and decision. The court denied the motion for injunction, and dismissed the complaint.

While the ruling had to do with motor carrier rates, under Part II of the Interstate Commerce Act, the court noted that its ruling applies with equal force to suspension provisions in Parts I, III, and IV of the act.

Commission's Florida Rate Order Upheld. The United States Supreme Court in a decision rendered December 22 held that the Interstate Commerce Commission, in prescribing intrastate freight rates for railroads under section 13 (4) of the Interstate Commerce Act, may give weight to deficits in passenger revenues.

This suit was brought in the Federal District Court for the northern district of Florida by the Florida Railroad and Public Utilities Commission which sought to set aside an order of the I.C.C. requiring Florida railroads to establish intrastate freight rates which would reflect the same increases as authorized for comparable interstate traffic. The principal contention of the Florida commission was that the I.C.C. lacks power to increase freight rates to offset losses from passenger traffic.

A three-judge federal district court sustained the commission, and dismissed the complaint. An appeal was then taken to the United States Supreme Court. That court's majority opinion was dissented from by Justice Douglas, with Chief Justice Vinson concurring. The dissenting opinion said: "The action of the commission is a serious invasion of state sovereignty. The federal agency can now take over the rate-making function heretofore exercised by the states, whenever any part of the interstate operation, no matter how remote from or unrelated to the intrastate rate, is producing a deficit."

Developments in the competitive field during 1952 disclose intensified efforts on the part of those transport agencies which compete with the railroads to obtain increasing proportions of the nation's freight and passenger traffic; continuation of certain governmental policies that handicap the railroads in their competitive struggle; and no reduction in the expenditure of public funds to provide extensive facilities for all agencies of transport, other than railroads and pipelines.

To offset these competitive handicaps and further to raise the standard of their service, railroads are spending record sums of money to improve both roadway and equipment. Marked advances have also been made in effecting economies and increased operating efficiency. Efforts have continued to bring about changes in policies largely responsible for existing inequitable competitive conditions.

Significant developments in the competitive field during the year 1952 are outlined in this section.

1952 Motor-Vehicle Registrations. The Bureau of Public Roads estimates that motor vehicle registrations in the United States in 1952 reached the record total of 53,363,000. Automobile registrations are expected to aggregate 43,894,000, an increase of 2.8 per cent over 1951; truck and bus registrations, totaling 9,469,000, show a corresponding increase of 2.6 per cent.

Truckload Commodity Statistics. The I.C.C. on July 31 notified Class I common and contract motor carriers that it had prepared regulations to govern the compilation and reporting of truckload commodity statistics, and gave truckers until September 30 to submit their views with respect to the proposal. The regulations would require such carriers, with certain exemptions, to file an-

nual commodity reports according to groups and classes identical with those prescribed for the railroads. Less-than-truckload traffic would not be included. Final action in the matter is still pending.

Truck Movement of Mail Increases. The Post Office Department has reported that 380 truck routes for handling short-haul mail were established in the fiscal year ending June 30, 1952, and that it contemplates establishment of 480 more routes in fiscal 1953. Assistant Postmaster General John M. Redding recently estimated that about 10 per cent of all mail now moves by truck.

The Maryland Tests

Road Test Shows Damage by Trucks. The final report of the Highway Research Board on the Maryland test road project, released early in October, concluded that heavily loaded trucks can cause serious damage to a paved highway. The tests, made by the board in the summer and fall of 1950 on a section (1.1 mile) of portland-cement-concrete pavement constructed in 1941 near La Plata, Md., were sponsored by highway departments of eleven states and the District of Columbia. Loads employed in the test were 18,000 lb. and 22,400 lb. on single axles, and 32,000 lb. and 44,800 lb. on tandem axles.

Air Line Rates and Fares. Six large domestic air lines were ordered by the Civil Aeronautics Board (C.A.B.) on February 27 to halt their cut-rate coach services on March 31, because the air lines involved had failed to reduce off-peak coach fares to the specified four cents per passenger-mile, or to make available enough seating capacity to qualify the planes as "true coaches." Before the cut-off date, however, the carriers put into effect rates, and provided facilities, which complied with the requirements specified by C.A.B.

A flat $1-a-ticket increase in passenger fares on domestic air lines was authorized by C.A.B. on April 9. The increase applies equally to long or short trips.

Continuation of "directional rates," which enable domestic air lines to handle freight below minimum rates on "back haul" flights, was authorized by C.A.B. on July 22. As a result of its air freight investigation in 1950, the board found that much greater volumes of freight were carried from east to west and from north to south than in the reverse directions, resulting in a substantial amount of unused freight space on return flights. To provide some relief, directional rates were authorized on August 10, 1950, on a temporary basis. The board's report of July 22 resulted from a re-examination of the directional rate situation, in the course of which the air lines reported that low back-haul rates had substantially increased their business.

C.A.B. Subsidy Separation Report. A revised administrative subsidy separation report for both domestic and international United States air carriers was issued by C.A.B. on October 1. Revised figures and estimates were included for fiscal years 1951-1954. The report established the following division of total mail pay between service mail pay and subsidy for domestic air carriers:

	Fiscal years			
	1951	1952	1953	1954
Service mail pay	$27,487,000	$33,744,000	$38,290,000	$42,932,000
Subsidy	36,130,000	26,013,000	25,621,000	24,568,000
Total mail payments	63,617,000	59,757,000	63,911,000	67,500,000

Summarizing these statistics, it appears that for the four years subsidy to domestic air carriers will have constituted approximately 44 per cent of total mail payments to them.

Airport Program Pushed. The Civil Aeronautics Administrator announced on July 29 that a total of 169 airport construction or development projects will be undertaken under the Federal Aid Airport Program during the fiscal year 1953, at an estimated expenditure of $19,055,855. The federal government will provide $9,977,250 of that amount, the balance of $9,078,605 to be made up of matching funds put up by local or state project sponsors.

Since the Federal Aid Airport Program began in 1946, the Civil Aeronautics Administration (C.A.A.) has obligated $182,500,000 of the $195,000,000 appropriated by Congress under the Federal Airport Act of 1946, the remainder being under tentative allocation. Through September 1952, 2,311 projects had been completed at 1,162 locations.

Secretary of Commerce Sawyer announced on October 27 that he had directed C.A.A. to review the Federal Aid Airport Program as a basis for seeking additional funds for the purpose of accelerating the nation's airport development. In a study dealing with airport planning, made public in August, C.A.A. predicted that air line traffic will more than double in the decade ending in 1960, and that about 40 million passengers will be carried by the air lines in 1960.

Loss Reported by Inland Waterways Corporation. Operations of the Inland Waterways Corporation for the fiscal year 1952 resulted in a loss of $325,167. This compares with a profit of $81,734 from operations in fiscal 1951. Losses from water-line operations on the Mississippi and Warrior divisions totaled $787,030, which compares with a corresponding loss from those operations of $526,770 in fiscal 1951. Railroad operations on the Warrior division showed a profit of $461,862 in fiscal 1952, a reduction of about 24 per cent from the $608,504 profit reported for fiscal 1951.

The unsatisfactory result for fiscal 1952 is attributed by the corporation to tonnage losses. Total freight transported in the corporation's own barges was 2,484,489 tons, compared with 2,797,983 tons in fiscal 1951. Tonnage handled for the account of others fell from 133,688 tons in fiscal 1951 to 103,443 tons in fiscal 1952.

William G. Oliphant of New Orleans became president of the corporation on January 29, 1952. He had been serving as acting president since September 21, 1951, succeeding A. C. Ingersoll, Jr., who resigned.

A Backlog of $11.3 Billion

Congressional Committee Reports on Study of Waterway Projects. A subcommittee of the House Public Works Committee, created in August 1951 to study policies, practices, and procedures in connection with authorization and construction of waterway projects, rendered a report on December 5, 1952, which recommended tighter supervision over granting of authorizations and prosecution of river and harbor and flood control projects, increased coordination between the various government agencies handling such projects, and a review of the present backlog of authorized projects in view of rising construction costs.

The report pointed out that the existing backlog of work will require expenditure of an additional $11.3 billion and would take approximately 25 years to complete. This backlog comprises 949 river and harbor and flood control projects, some of which were authorized 20 or 30 years ago. The report recommended that these projects be reviewed and divided into two categories—those that still appear desirable, economically justified and of national importance, and those which now appear questionable.

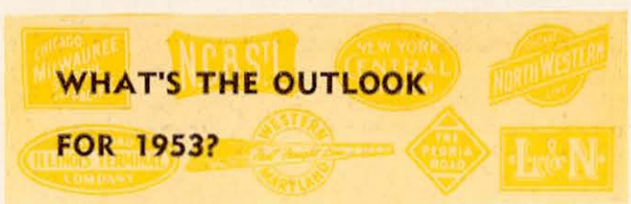
The report called attention to the fact that 189 river

and harbor projects under construction are presently estimated to cost $2,539 million, but at time of authorization the estimate was $1,217 million. Likewise, the estimated cost of 167 flood control projects now under construction is $3,433 million, whereas the estimated cost at time of authorization was $1,656 million.

The subcommittee report emphasized the widespread distribution of responsibility within the federal establishment for development and utilization of the nation's water resources. Its studies disclosed that 38 principal agencies of the executive branch have direct responsibility in varying degrees for water-resource development and utilization. Another 13 agencies are intermittently and collaterally concerned with such matters. Seven committees of the House of Representatives have definite responsibilities in this field, and at least four additional committees have responsibilities which involve consideration of water resource development. The report accused the Army engineers of flagrant disregard of a law requiring them to keep abreast of needed changes in recommended projects.

The Corps of Army Engineers had previously been sharply criticised for its handling of waterway projects by a subcommittee of the House Appropriations Committee in a report made public on August 20, 1951. That subcommittee stated that the Army engineers, by inadequate engineering, planning, and estimating of river and harbor and flood control projects, have deprived Congress of reliable cost and economic information with respect to such projects, a situation which is costing taxpayers millions of dollars.

Highway, Air, and Waterway Appropriations. Fiscal 1953 appropriations provided substantial expenditures for the benefit of competitors of the railroads. Appropriations for the Department of Commerce included approximately $141 million for the Civil Aeronautics Administration and its various air transport activities, and $325 million for the feneral-aid highway program of the Bureau of Public Roads. Another act (Public Law 413), approved June 25, authorized additional federal-aid highway appropriations for the two ensuing fiscal years as follows: Fiscal 1954, $550 million, and a similar amount for fiscal 1955. The act also authorized a further appropriation of $25 million in each of those fiscal years for the "national system of interstate highways." The Civil Functions Appropriations Act (Public Law 504), approved July 11, carried fiscal 1953 appropriations of $236,783,800 for rivers and harbors projects, and $325,012,800 for flood control projects, a total of approximately $562 million.



The railroad outlook for 1953 is, as usual, a mixed and somewhat uncertain one. Some financial observers of the railroad scene take an optimistic position, which is reflected to a considerable extent by the activity of rail securities on the stock exchanges. A more cautious approach must, however, take unfavorable as well as favorable prospects into account. Distinction should be made, too, between short-term prospects and the longer-term trend.

With a new administration at the controls in Washington, widespread confidence prevails that the many domestic, economic, and fiscal difficulties of recent years may gradually be removed, or at least lessened in their impact. This confidence will doubtless have its effect on the national economy. Although intangible and psychological in character, it should exert a significant influence in the business world, with favorable reactions on railroad traffic.

Railroad freight traffic seems likely to attain much the same level during the first quarter of 1953 as in the corresponding quarter of 1952. Shipper Advisory Boards' carloading estimates for that quarter show an expected increase of 1.7 per cent. For later quarters of the year, the issue is not so clear. Some economists, within and without the government, anticipate fairly high production levels for the first half of the year, with perhaps a tapering off in the second half. Such a trend, if experienced, would foreshadow some reduction in freight traffic, taking the year as a whole. On the other hand, steel production should be greater in 1953 than in 1952, which would have a substantial and wholesome effect on the movement of freight. The passenger traffic trend is now downward, and that trend may continue into 1953, although to a less pronounced degree.

Total operating revenues will depend, of course, on the traffic volumes experienced, and on continuation of or adjustments in existing rate and fare levels. Operating expenses will follow the revenue trend, modified by the effect of economies still to be realized from dieselization and other improved methods and facilities, and by price and wage trends which will exert their customary influence. Present wage contracts expire generally in October.

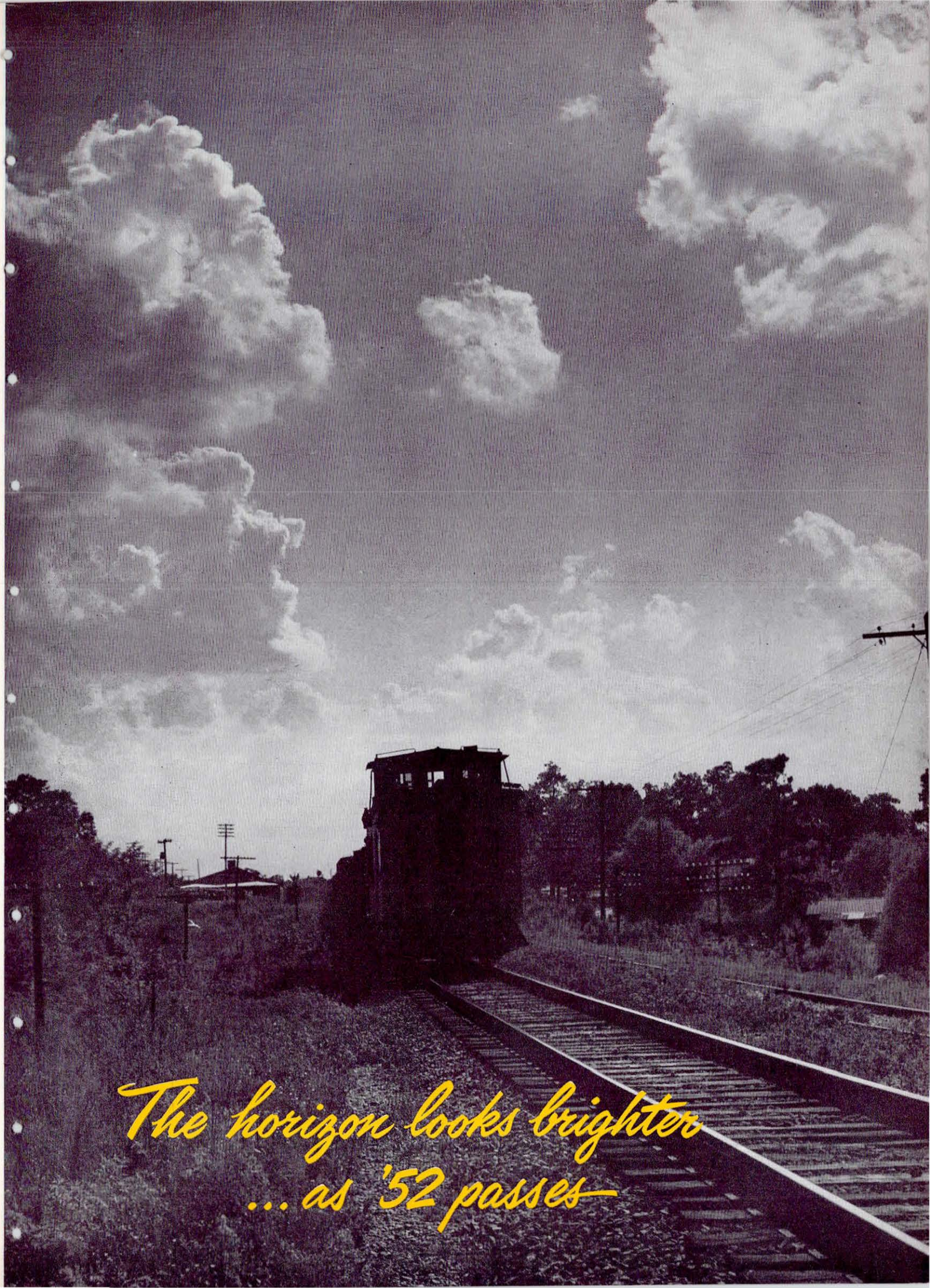
The prospect for increased net earnings in 1953 appears none too clear, although increased traffic, greater stabilization of costs, and further progress in efficiency might conceivably turn the scale upward.

For the longer-range point of view, too much optimism over the improved earnings of a single year, such as 1952, should be tempered by consideration that any recession in economic activity would immediately be felt by the railroads; also, that operating expenses may rise to still higher levels without the offset of corresponding increases in rates, fares, and charges.

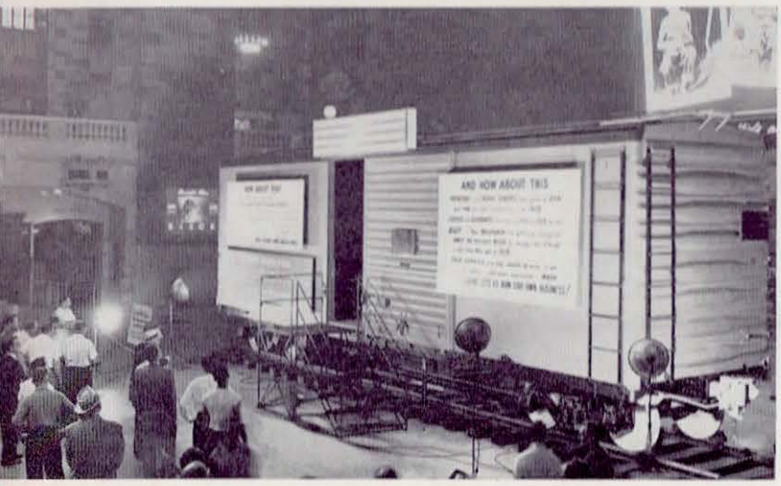
It is hoped that definite steps may be taken, in 1953, toward modification of public transportation policies, both legislatively and administratively. To such an end, the railroads and those cooperating with them in that field will bend all their energies. If these efforts are reasonably successful, considerable progress will have been made toward assuring a sound and healthy future for railroad transport in the United States, conducted as a private operation and under efficient and businesslike methods. Such a result would indeed serve as a beacon to the almost completely nationalized railroad operations throughout the rest of the world.

It would seem, to any impartial observer, that the railroad industry has earned the right to more equitable treatment at the hands of the nation it serves. Railroads have reduced their debt obligations and their interest charges, have made marked advances in plant and service, and have exhibited a keen sense of their heavy responsibilities under recent war and peace conditions. Those responsibilities will be met, whatever betides, but relief from existing handicaps would greatly ease the task.

There still hangs over the United States, and over its friends and allies, the sinister threat of communist aggression. That threat, until dispelled, makes any appraisal of future developments dependent on the contingency of war or no war. That contingency remains, and seems likely to continue throughout 1953, at least.


The horizon looks brighter
... as '52 passes—

'52 Was a Year of Growing Rail-Mindedness . . .



BY THE PUBLIC, which paused to learn more about the inequitable transportation picture.

BY BUSINESS GROUPS, such as the Transportation Association of America, which worked hard toward its solution.

BY UTILITIES COMMISSIONERS, who finally agreed that unprofitable passenger trains should be dropped.

BY THE YOUNGER GENERATION, who in scout troops and school classes came to learn how the railroads serve.

Mother Nature Dominated the News Scene . . .

BLIZZARDS hit the west, and captured the "City of San Francisco" in a remote mountain pass. They also hit . . .

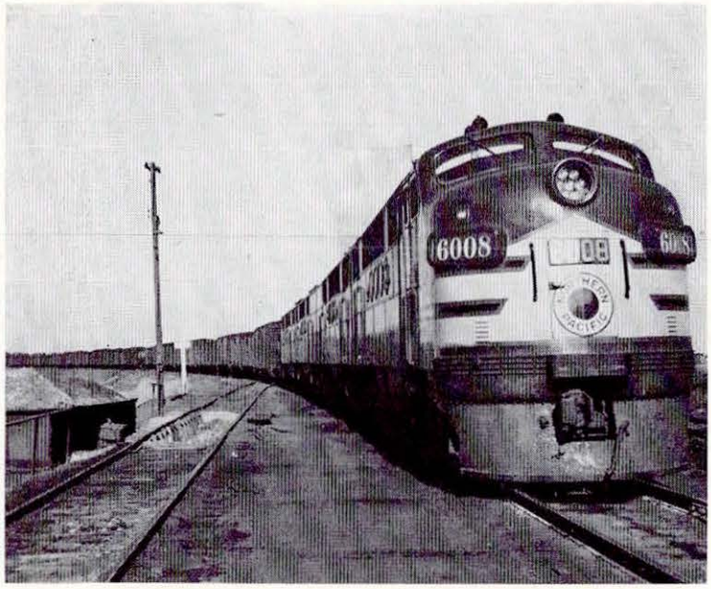
New England where the Boston & Maine rescued hundreds of stranded motorists and bus passengers.

Portland (Me.) Press Herald Photo

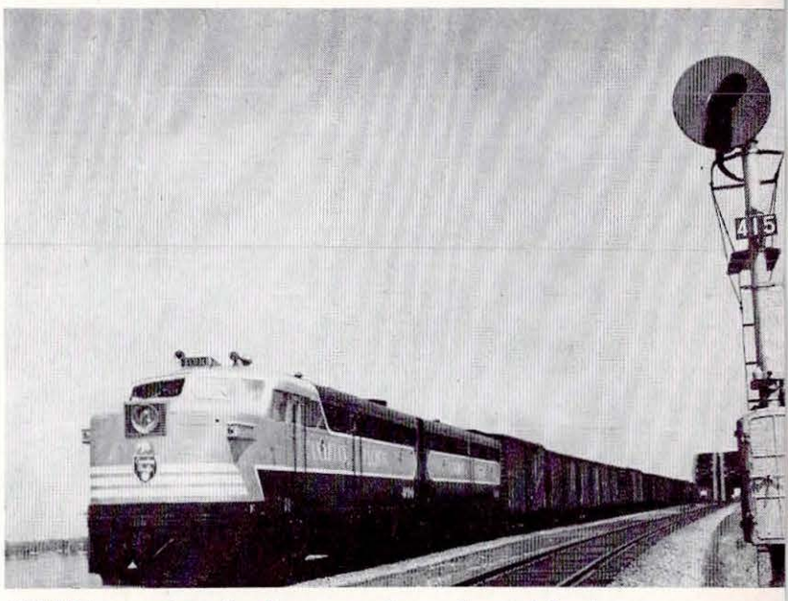
FLOODS wrecked miles of line along the Missouri and the Mississippi. But the railroads kept traffic moving.

EARTHQUAKES in California forced the Southern Pacific into one of the fastest earthmoving projects in history.

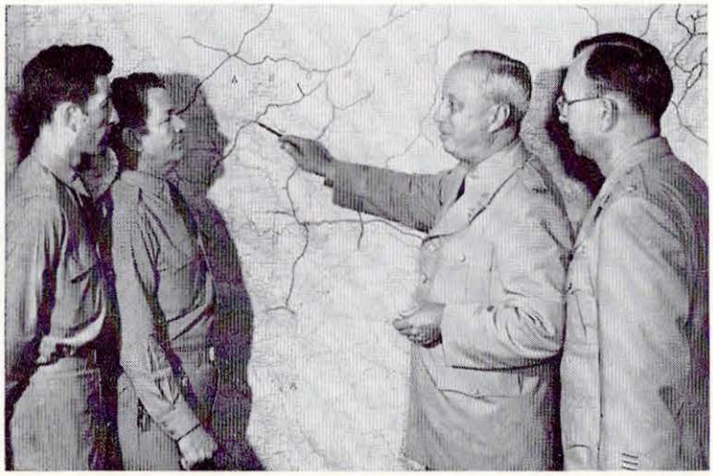
. . . But There Were Many Other Highlights



EX PARTE 175 freight rate increases were finally authorized by the Interstate Commerce Commission.



CANADA turned to diesel power as heavy demand for its products and resources spurred a broad-based prosperity.

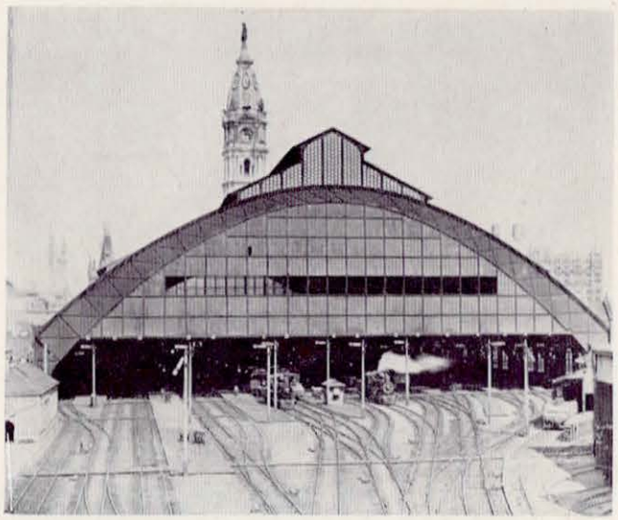


"RAILROAD COLONELS"—such as President Clark Hungerford of the Frisco—returned to civvies as operating brotherhoods agreed to settlement of their wage disputes.

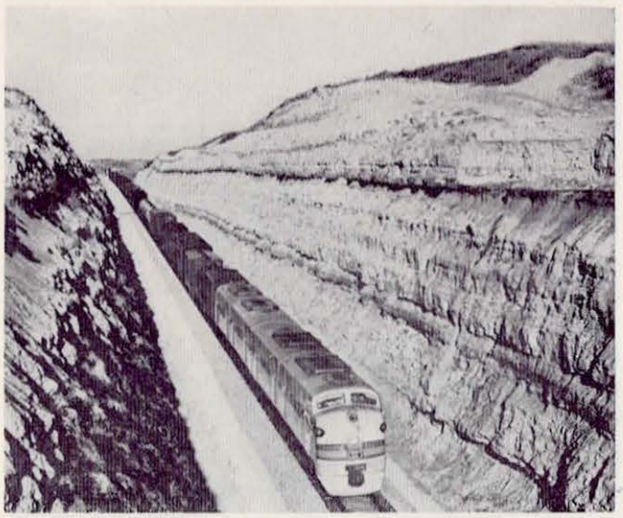
UNION MEMBERSHIP became a "must" for clerks and 16 other non-operating groups on eastern roads which signed a union shop agreement.

IRON ORE, barely enough to see the nation's mills through this winter, was rushed in by water and rail.

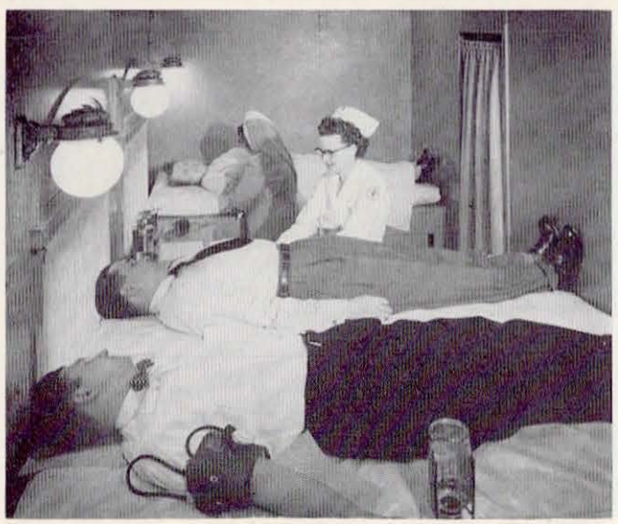
PER DIEMS were raised to $2 on May 1 after railroad subscribers to car service rules voted for the increase.



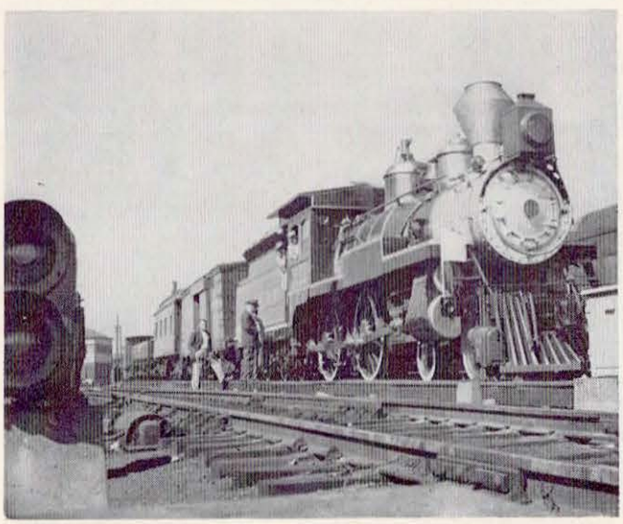
AN OLD LANDMARK—Pennsylvania's Broad Street station in Philadelphia (here shown as it appeared in 1895) —passed from the railroad scene as operations were transferred to the newer 30th Street station.



A NEW LANDMARK—spectacular Summit cut on the Burlington's $16 million Kansas City cutoff—witnessed this first scheduled freight train on October 28 as the "Q" inaugurated accelerated service over the new route.



BLOOD for the armed forces was gathered in rolling blood donor units provided by the Great Northern, Southern Pacific, Western Pacific and several others.



"THE KATY RAILROAD and the Last Frontier"—an important contribution to historical annals—was announced by this old timer's arrival at St. Louis on September 25.

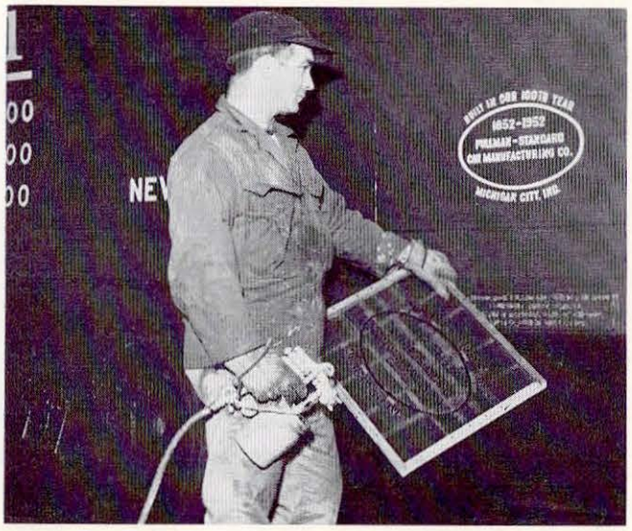
There Were Some Significant Birthdays . . .

100 Years Old . . .

Chicago, Rock Island & Pacific

Western Maryland

Texas & New Orleans (Southern Pacific)



Pullman-Standard Car Manufacturing Company

75 Years Old . . .

St. Louis Southwestern

. . . and Some New Presidents Took Office

John W. Smith
Seaboard Air Line

W. Arthur Grotz
Western Maryland

Timothy G. Sughrue
Boston & Maine

E. Spencer Miller
Maine Central

Curtis M. Yohe
Pittsburgh & Lake Erie

William White
New York Central

Perry M. Shoemaker
Lackawanna

Frank M. Hicks
Gulf, Mobile & Ohio

While in Washington . . .

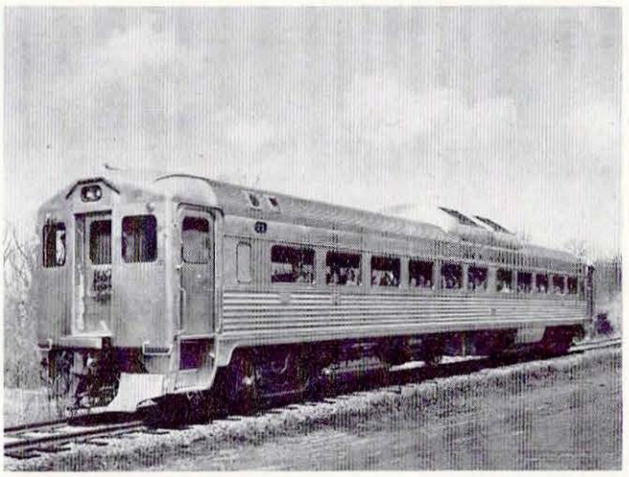
Jack Garrett Scott became undersecretary of commerce for transportation

Martin K. Elliott succeeded Clyde B. Aitchison . . .

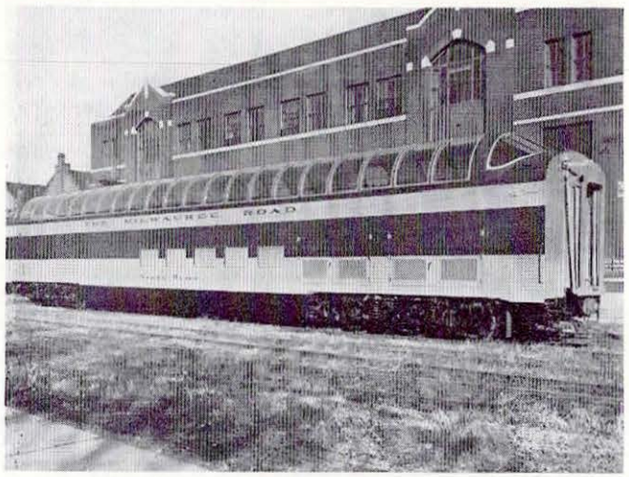
. . . And Anthony F. Arpaia succeeded John L. Rogers as members of the I.C.C.

Passenger Service Got More Attention

SERVICE PERFORMANCE was placed under direct supervision of trained employees by the Pennsylvania.



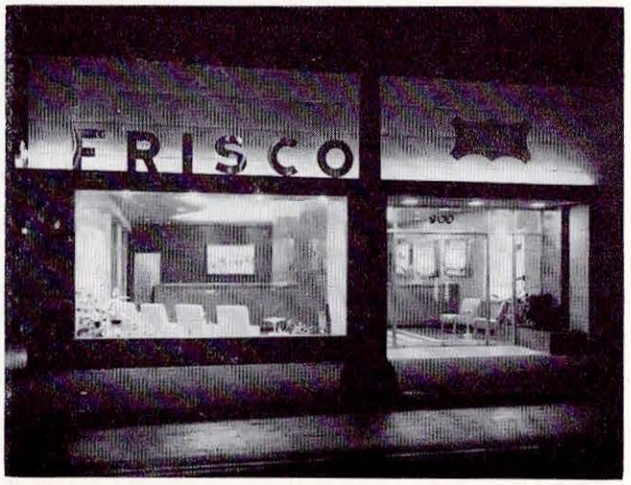
NEW TRAINS—more than 70 of them—were inaugurated by the New Haven with equipment such as this Budd car.



SUPER DOMES for top-level sightseeing were introduced for the Milwaukee's "Hiawatha" fleet and. . . .

DRAWING ROOM SUITES for business conferences were introduced on the Pennsylvania's new streamliners.

OLDER CARS were brought up to date by the Texas & Pacific (above), Northern Pacific, Soo Line and others.

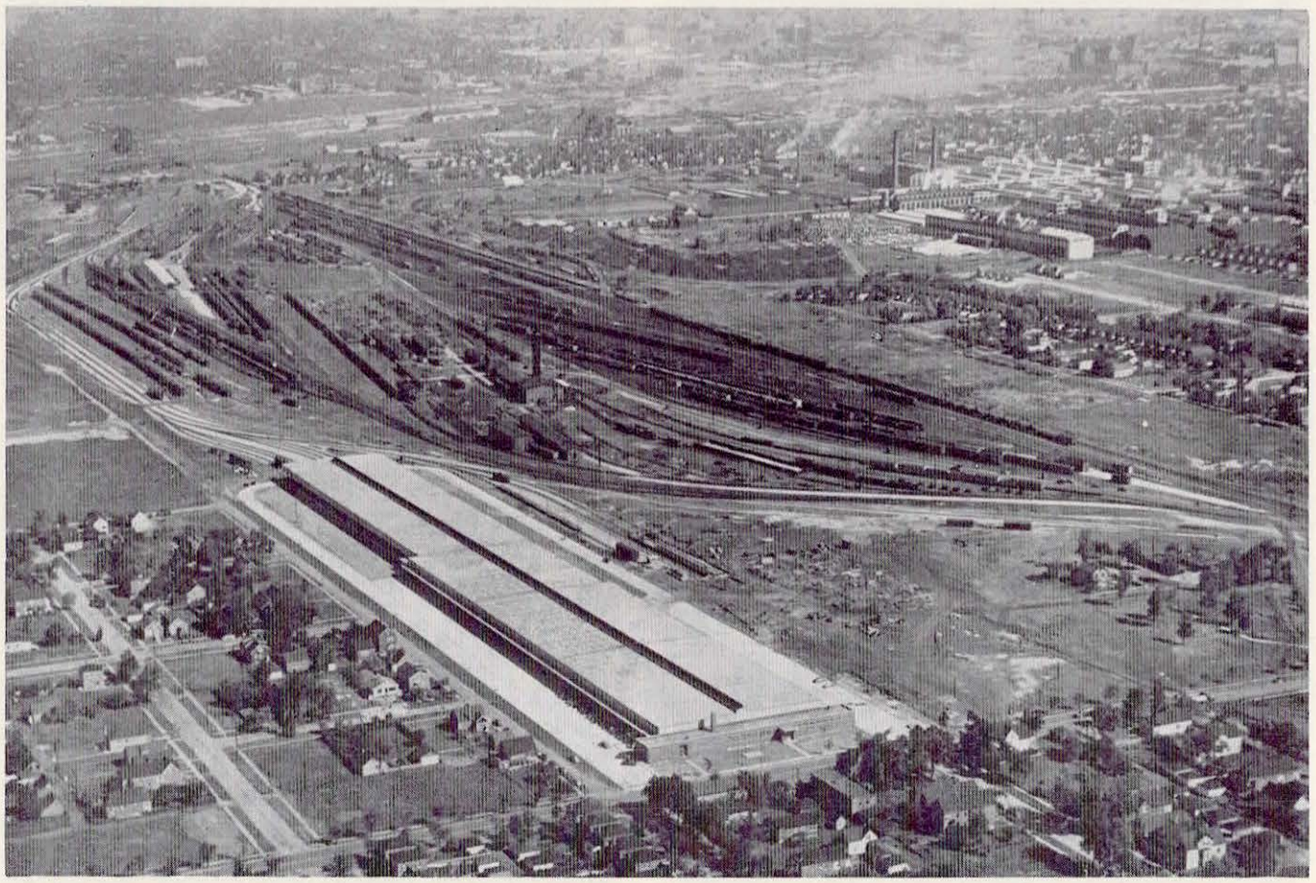


TICKET OFFICES—like this one in St. Louis—were redesigned in keeping with streamliner decor.

Shippers, Too, Got a Better Deal

TRANSCONTINENTAL schedules were quickened by as much as 24 hours on several important through routes.

NEW YARDS were put in service by several roads. This is the Southern's Ernest Norris yard near Birmingham.



L.C.L. got special attention as several roads (as at the Santa Fe's Corwith facility shown here) opened large, costly new mechanized freight stations.

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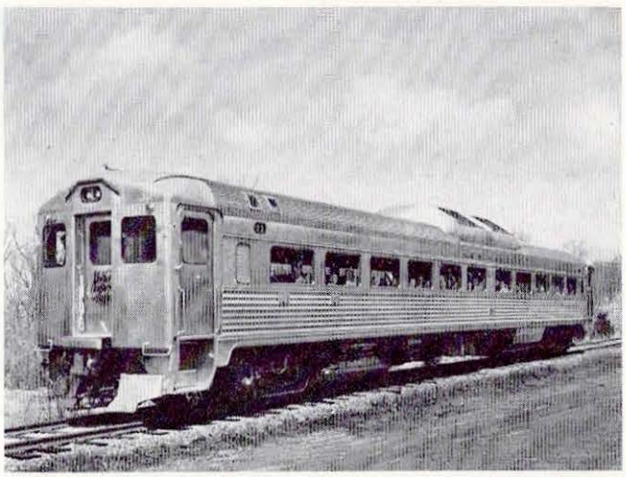

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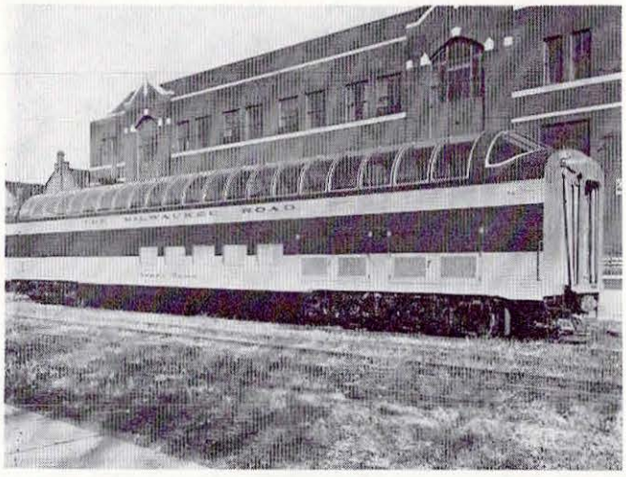

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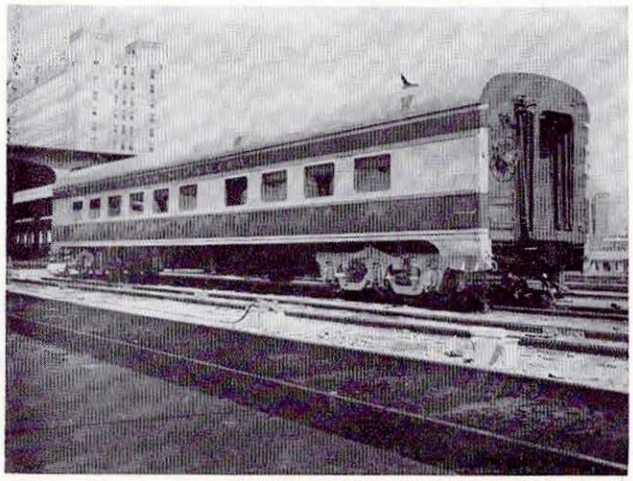

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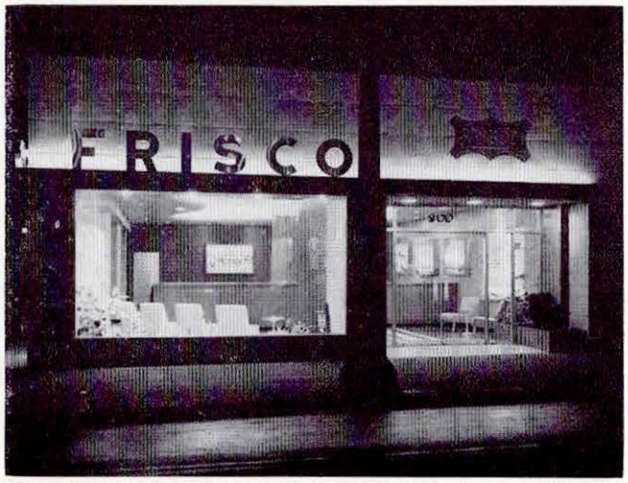

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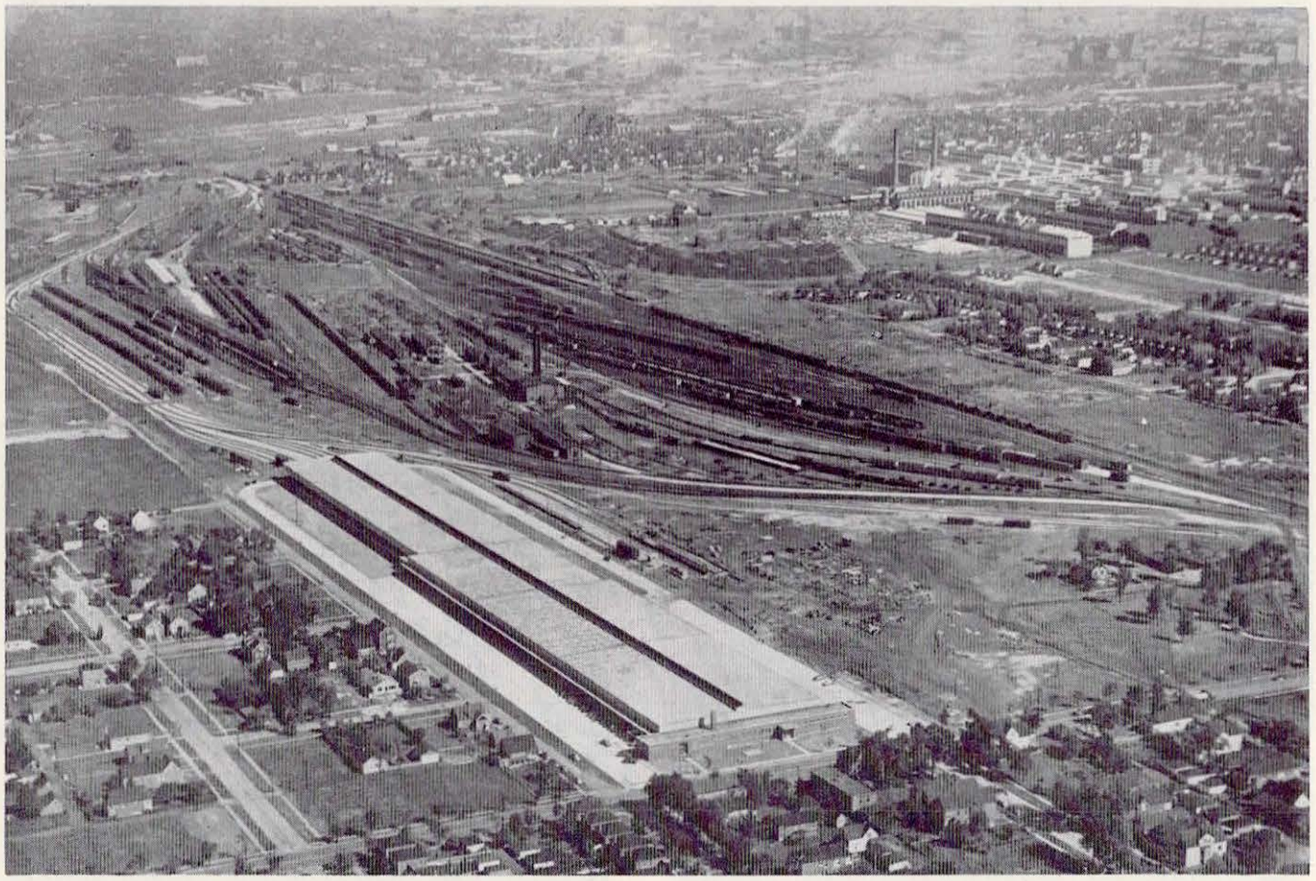


L.C.L. got special attention as several roads (as at the Santa Fe's Corwith facility shown here) opened large, costly new mechanized freight stations.

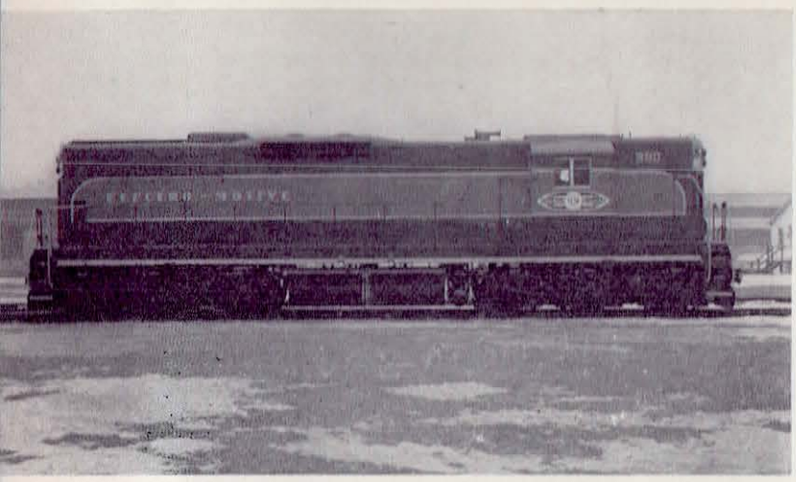
RETARDER SPEED CONTROL—an effective automatic tool for better yard operation—was introduced in the Milwaukee's new Air Line yard at Milwaukee.

A WEDDING with truckers is still distant, but the idea showed increasing momentum as more roads turned to hauling truck trailers on flat cars.

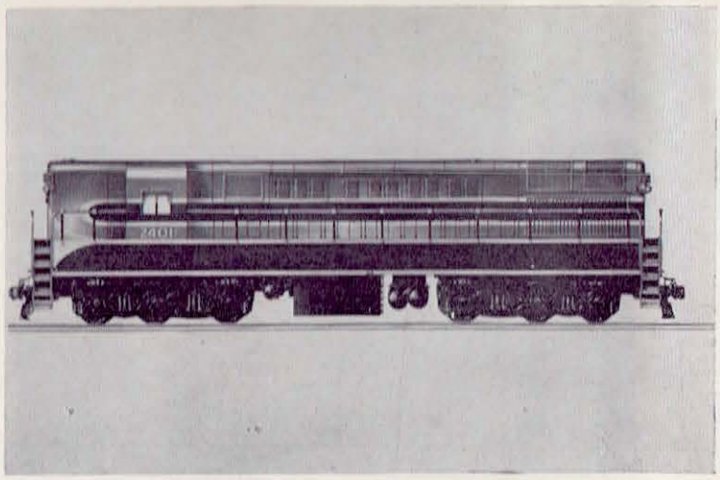
The Motive Power Scene Was Changing

VERSATILE ROAD-SWITCHERS proved adaptable to commuter service as well as freight operations.

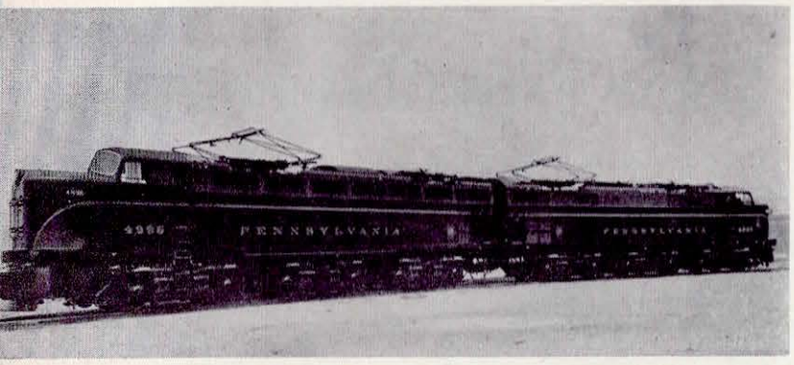
GAS TURBINE-ELECTRICS built by General Electric are in regular service on the Union Pacific which will soon have 25 of them handling main-line freight schedules.



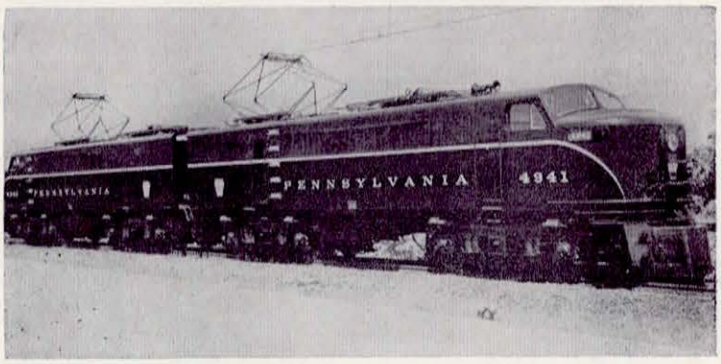
DIESEL TREND is toward the all-purpose hood-type locomotive. Electro-Motive introduced the six-motor SD-7 model in June.



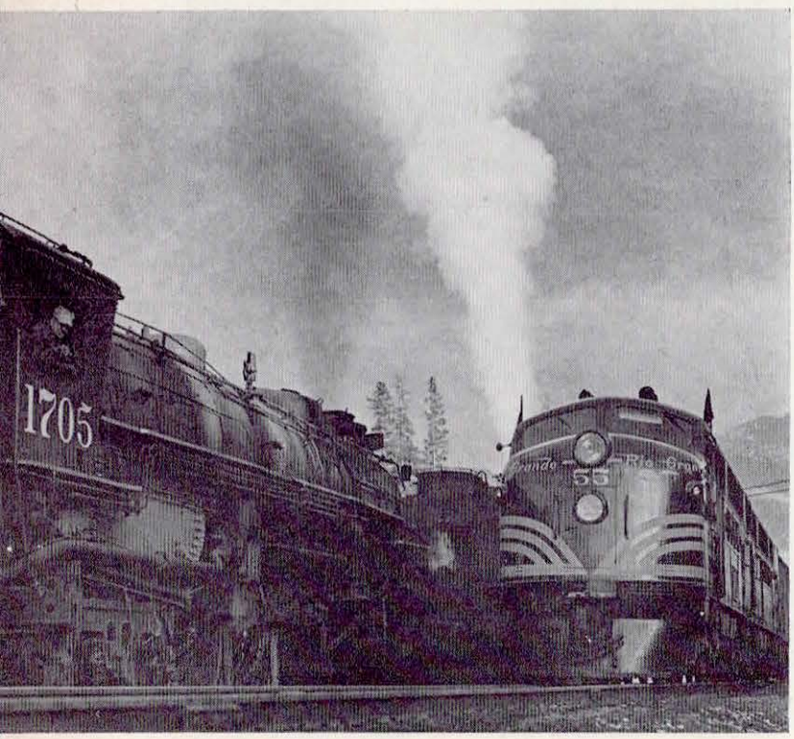
"THE TRAINMASTER"—announced by Fairbanks-Morse in November and offering 2,400-hp.—is another newcomer of this type.



ELECTRIFICATION COSTS may tumble as the result of this new Westinghouse ignitron locomotive and . . .



THIS NEW DESIGN by General Electric, both of which convert high a.c. voltages to 600 volts d.c.



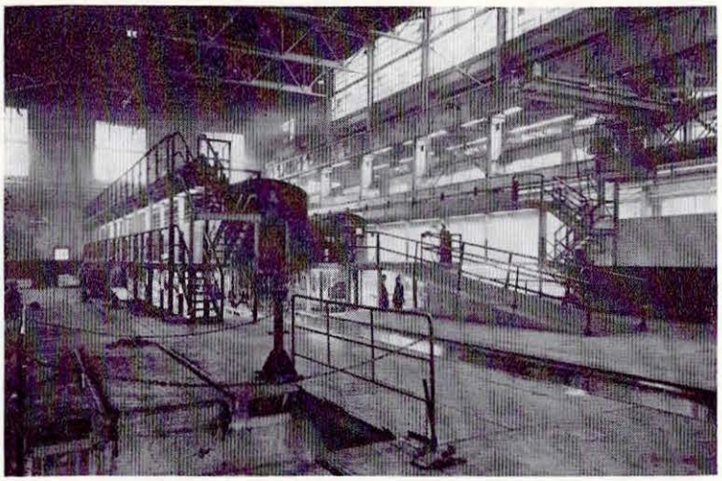
DIESEL OUTRANKED STEAM by performing two-thirds of gross ton-miles; over 70 per cent of passenger car-miles; and over 75 per cent of switching locomotive-hours.

TEST MODEL gas turbine-electric built by Westinghouse and Baldwin spent most of the year in extensive passenger service tests on three roads.

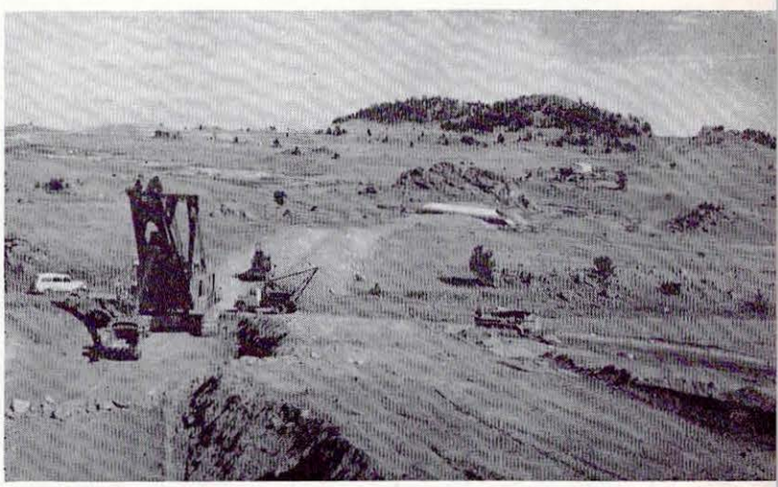
New Ideas and New Tools Were Introduced

TELEVISION went to work "grabbing numbers" during tests held at the Baltimore & Ohio's Barr yard, Chicago.

PERSONNEL TRAINING opened new horizons in human relations besides producing better informed employees.

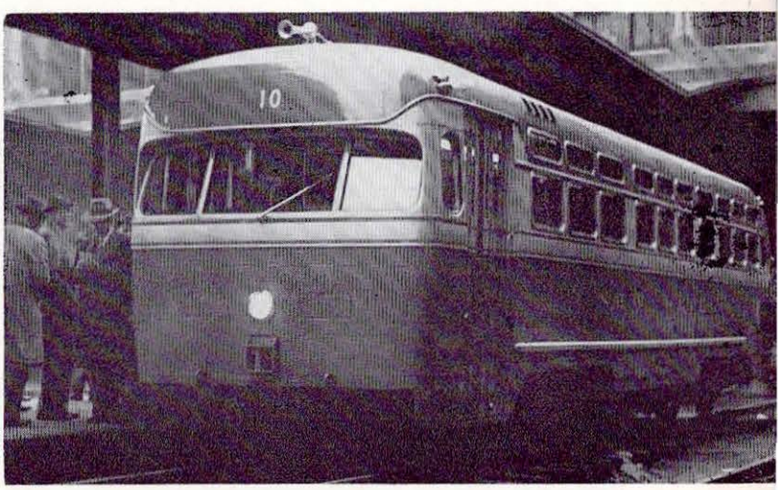


LOCOMOTIVE SHOPS were "dieselized" — either by modernization or new construction—in keeping with the changing motive power scene.

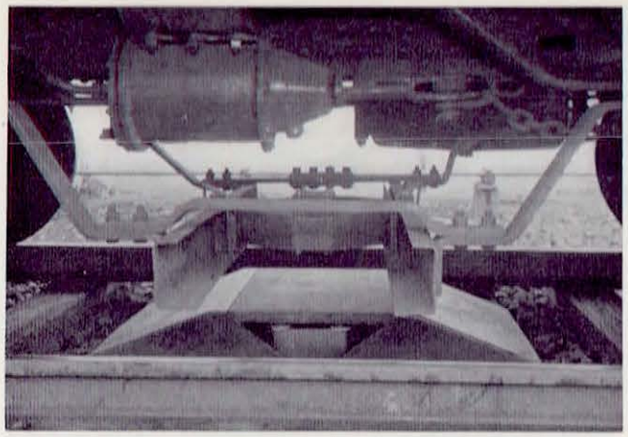


NEW LINES for faster and heavier trains were under construction at several points such as the Union Pacific's 42-mile Sherman Hill (Wyo.) by-pass.

CENTRALIZED TRAFFIC CONTROL enabled the Southern to take up 66 miles of second main track and cut maintenance costs.



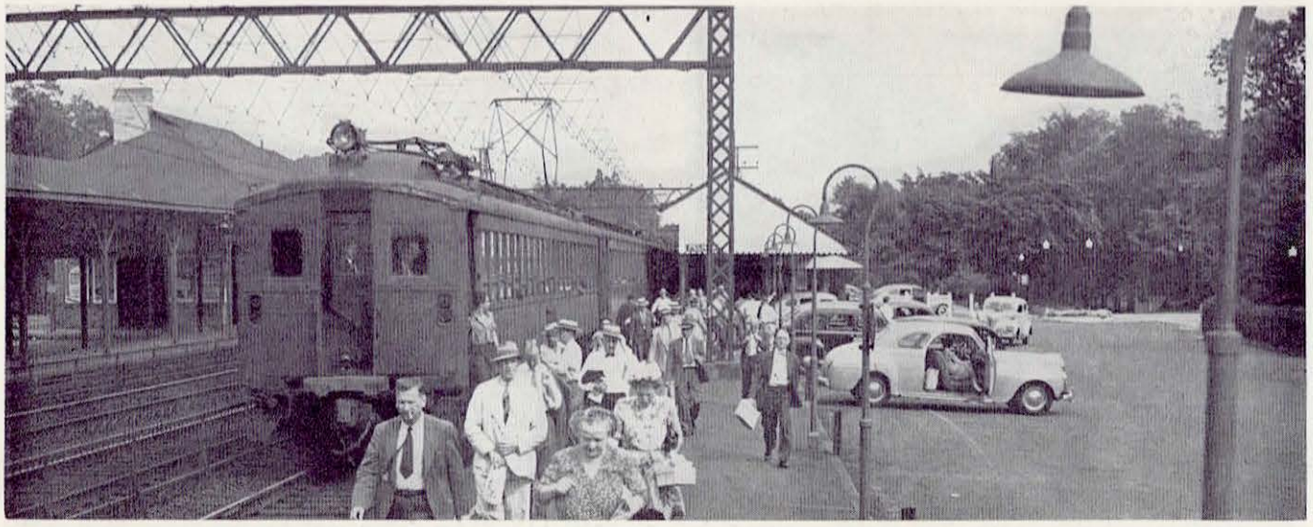
LOW COST branch-line passenger service was explored by the New Haven with this Mack diesel-electric rail bus fitting several assignments.



TRAIN IDENTIFICATION—operating electronically on a fail-safe basis—was introduced on the Erie.

"DIALING THROUGH" between phone line and unattended wayside radio stations improved flexibility.

But Some Headaches Remained Unsolved



COMMUTERS continued to expect the railroad industry to underwrite part of the cost of country living.

HOT BOXES continued to occur and despite many attacks on the problem no effective solution has yet appeared.

GRADE CROSSINGS and thoughtless motorists still add up a heavy toll in life and property.

DINING CAR COSTS remained sky high although cost-cutters like frozen foods and radar may point to a cure.

LOSS AND DAMAGE is a problem demanding eternal vigilance in yards and stations to keep it under control.

HEAD-END TRAFFIC continued to defy efforts to bring handling costs within reason. But unit handling equipment may provide an answer at many points.

Picture Selection and Description in This Section
By A. M. COX, JR.
Western News Editor

Fairchild Aerial Surveys Photo

RAILROAD TERMINALS in metropolitan areas not only account for large investments not required of competing forms of transportation using facilities provided by taxpayers, but also are subject to substantial tax levies.

1952 Capital Outlays Totaled $1 1/3 Billion

Second highest annual total on record compares with 1951's all-time peak of $1.4 billion—This year's expenditures also to be about $1 1/3 billion

By **WALTER J. TAFT**
Washington Editor

Last year's gross total expenditures of the Class I line-haul railroads aggregated about $1⅓ billion, the second highest annual total on record. It has been exceeded only by the previous year's $1.4 billion from which it was off 5.8 per cent.

The outlook for 1953 is that total outlays for equipment and fixed facilities will also be on a $1⅓ billion basis, or slightly higher.

Last year's expenditures would probably have crossed the 1951 mark to reach a new peak, except for the strike in the steel industry. Defense Transport Administrator James K. Knudson said last July that "the cumulative effect of the slippage in steel production, combined with the seasonal vacation shutdowns, will mean the loss of 300 diesel locomotive units and about 20,000 freight cars." Three hundred diesel units and 20,000 freight cars would involve capital expenditures of more than $150 million—enough to have built the 1952 total from $1⅓ billion to nearly $1½ billion.

The estimate by the railroads which puts their gross capital expenditures for 1952 at about $1⅓ billion (the exact figure was $1,332,630,000) was based on actual expenditures for last year's first three quarters and estimates for the fourth quarter, as reported to the Interstate Commerce Commission. It was given by the commission's Bureau of Transport Economics and Statistics

Table 1—Selected Balance Sheet Items—Class 1 Line-Haul Railways

Year	Cash and Temporary Cash Investments (000)	Total Current Assets (000)	Total Current Liabilities (000)	Excess of Current Assets over Liabilities (000)	Total Long-Term Debt (000)	Total Corporate Surplus (000)
1929*	$677,955	$1,717,953	$1,200,984	$516,969	$11,138,121	$5,029,171
1930*	592,071	1,510,975	1,162,170	348,805	11,174,816	4,577,730
1931	419,510	1,213,350	1,147,239	66,111	11,153,678	4,395,508
1932	379,136	1,063,271	1,130,731	67,460	11,247,777	4,094,531
1933	394,117	1,034,560	1,261,382	— 226,822	11,112,005	3,900,883
1934	380,212	1,058,326	1,571,326	— 412,995	11,041,472	3,714,302
1935	439,403	1,086,467	1,670,767	— 584,300	10,821,788	3,507,220
1936	576,343	1,292,421	1,885,574	— 593,153	10,452,266	3,349,889
1937	392,486	1,143,990	1,937,830	— 793,840	10,686,814	3,126,391
1938	480,550	1,120,968	2,243,961	—1,122,993	10,558,723	2,739,742
1939	578,359	1,292,705	2,555,903	—1,263,198	10,352,646	2,563,879
1940	680,400	1,442,142	697,200†	744,942	11,288,311†	2,474,249
1941	904,600	1,914,544	1,115,320‡	799,224	11,186,063	2,666,625
1942	1,736,933	3,065,093	1,806,030	1,259,063	10,879,476	3,167,986
1943	2,807,275	4,497,065	2,923,078	1,573,987	10,462,770	3,748,508
1944	2,753,560	4,488,042	2,844,042	1,643,832	9,830,186	4,327,893
1945	2,545,909	4,345,830	2,108,245	2,237,585	9,286,001	4,608,846
1946	1,950,874	3,494,260	1,584,433	1,909,827	9,093,281	4,638,958
1947	1,908,887	3,575,914	1,942,772	1,633,142	8,831,806	5,174,106
1948	1,947,046	3,675,819	2,065,928	1,609,891	8,960,451	5,702,948
1949	1,570,636	3,067,146	1,696,558	1,370,588	9,154,027	5,949,064
1950	1,930,429	3,758,429	2,226,694	1,531,735	9,280,901	6,448,771
1951	1,742,705	3,702,584	2,262,370	1,440,214	9,600,139	6,837,036
1952	1,802,004	3,702,391	2,257,676	1,444,715	(1952 totals are Sept. 30)	

in the December issue of the bureau's "Monthly Comment." The fourth-quarter estimates did not include returns from four of the 131 Class I line-haul roads; but the three-quarter "actuals" are on the 131-road basis.

The 1952 total of $1,333 million included $953 million for equipment and $380 million for road. The latter represented an increase of 4.7 per cent above 1951's road figure which was $363 million. Last year's equipment total, on the other hand, was off 9.4 per cent, the comparable figure for 1951 having been $1,051 million.

Actual outlays during this year's first three quarters totaled $993 million, including $720 million for equipment and $273 million for road. The estimated fourth-quarter expenditures of the 127 reporting roads were $340 million, including $233 million for equipment and $107 million for road.

As for 1953, only the estimates for its first quarter had been submitted by the railroads when the December "Comment" was issued. They indicated that this year got under way with expenditures for road facilities 11

Table 2—Changes in Cash and Current Assets of Individual Large Railroads*

	Cash & Temporary Cash Investments Sept. 30		Inc. or Dec.	Total Current Assets		Total Current Liabilities		Excess of Current Assets over Liabilities		Inc. or Dec.
	1952	1951	%	End of Sept. 1952	End of Sept. 1951	End of Sept. 1952	End of Sept. 1951	End of Sept. 1952	End of Sept. 1951	%
AT&SF	$146,063,364	$120,048,066	+ 21.7	$244,323,116	$224,772,434	$129,734,437	$116,408,319	$114,588,679	$108,364,115	+ 5.8
ACL	22,377,123	13,433,250	+ 66.5	58,942,158	47,685,572	32,768,649	30,284,166	26,173,509	17,401,406	+ 50.8
B&O	52,433,264	51,696,702	+ 1.4	117,975,399	111,521,351	64,615,567	61,367,741	53,359,832	50,153,610	+ 6.4
B&M	14,852,074	13,772,822	+ 7.8	28,965,658	29,132,047	16,061,759	18,322,568	12,903,899	10,809,479	+ 19.4
CofGa	5,757,577	3,050,527	+ 88.7	14,274,446	12,995,807	7,121,425	7,691,463	7,153,021	5,304,344	+ 34.9
CofNJ	3,178,543	3,525,842	— 9.8	18,585,185	17,555,460	11,437,062	13,802,594	7,148,123	3,752,866	+ 90.5
CofPa	1,399,315	1,991,912	— 29.7	6,266,468	7,742,777	4,362,689	3,204,150	1,903,779	4,538,627	— 58.1
C&O	54,272,103	54,907,501	— 1.2	109,286,387	109,832,122	85,222,389	81,924,632	24,063,998	27,907,490	— 13.8
C&EI	2,505,597	4,291,900	— 41.6	8,038,994	9,384,972	5,990,090	6,873,611	2,048,904	2,511,361	— 18.5
C&NW	13,658,293	18,965,235	— 28.0	50,925,660	53,158,206	36,502,718	39,007,877	14,422,942	14,150,329	+ 2.0
CB&Q	35,770,072	23,927,575	+ 49.5	84,411,337	72,542,741	54,637,475	58,705,363	29,773,862	13,837,378	+115.2
CGW	4,653,881	4,419,509	+ 5.3	8,204,728	9,534,377	7,194,917	6,795,967	1,009,811	2,738,410	— 63.2
CMStP&P	31,238,449	32,552,531	— 4.0	90,892,314	92,278,818	47,611,163	50,840,747	43,281,151	41,438,071	+ 4.5
CRI&P	29,571,337	31,277,910	— 5.5	62,993,018	68,312,676	40,850,507	40,991,409	22,142,511	27,321,267	— 19.0
CS&PM&O	1,599,130	1,956,041	— 18.3	6,978,136	7,055,278	6,008,858	6,041,625	969,278	1,013,653	— 4.4
D&H	14,838,411	13,868,419	+ 7.0	23,256,290	23,289,866	8,011,963	8,727,447	15,244,327	14,562,419	+ 4.7
DL&W	15,601,062	13,434,195	+ 16.1	30,864,797	28,841,893	13,223,892	14,378,068	17,640,905	14,463,825	+ 22.0
D&RGW	26,358,035	29,779,377	— 11.5	45,291,261	48,102,535	19,325,426	19,056,360	25,965,835	29,046,175	— 10.7
DM&IR	4,164,269	13,486,683	— 69.1	14,920,482	22,343,914	17,438,877	21,910,220	—2,512,395	433,694	†
EJ&E	7,873,246	15,338,128	— 48.7	12,566,163	21,014,730	16,379,677	21,573,523	—3,813,514	—558,793	†
Erie	20,008,643	22,849,803	— 12.5	49,808,566	52,152,284	35,756,715	37,291,177	14,051,851	14,861,107	— 5.5
GTW	1,759,454	2,191,333	— 19.7	11,993,383	11,114,302	8,048,656	9,222,836	3,944,727	1,891,466	+108.6
GN	44,452,374	62,050,006	— 28.4	90,656,355	106,026,810	49,871,859	50,840,560	40,784,496	55,186,250	— 26.1
GM&O	26,565,069	18,087,284	+ 46.9	43,832,547	36,126,768	24,904,653	22,232,460	18,927,894	13,894,308	+ 36.3
IC	47,120,649	48,395,533	— 2.7	140,918,916	97,385,485	105,581,697	62,421,665	35,337,219	34,963,820	+ 1.1
LV	13,621,612	12,443,171	+ 9.5	24,620,144	24,617,626	15,509,921	14,045,606	9,110,223	10,572,020	— 13.9
LI	9,261,529	13,236,206	— 30.0	19,215,788	23,301,080	35,181,363	30,946,794	—15,965,575	—7,645,714	†
L&N	35,189,965	48,417,068	— 27.3	77,141,092	94,405,235	41,419,742	46,374,694	35,721,350	48,030,541	— 25.7
MStP&SSM	6,974,721	9,895,127	— 29.5	18,009,383	19,061,113	10,483,891	11,001,875	7,525,492	8,059,238	— 6.7
M-K-T	16,945,051	11,792,149	+ 43.7	31,333,139	26,428,950	19,562,926	17,264,986	11,770,213	9,163,964	+ 28.5
MP	69,373,657	66,124,527	+ 4.9	101,482,865	105,016,586	37,573,591	38,324,331	63,909,274	66,692,255	— 4.2
NYC	38,843,083	51,550,376	— 24.7	167,693,546	182,222,521	130,100,033	138,249,255	37,593,513	43,973,266	— 14.6
NYC&StL	20,928,361	21,360,704	— 2.0	45,377,860	44,650,071	34,384,224	34,500,000	10,993,636	10,150,071	+ 8.4
NYNH&H	14,160,401	18,608,384	— 23.9	31,036,020	43,172,401	32,477,214	29,238,165	—1,441,194	13,934,236	†
N&W	38,118,517	46,018,667	— 17.2	83,021,207	88,374,558	48,693,212	48,561,361	34,330,995	39,813,197	— 13.8
NP	19,033,704	25,584,812	— 25.6	63,341,355	67,581,824	38,796,287	39,878,645	24,545,068	27,703,179	— 11.4
PRR	140,471,702	119,245,950	+ 17.8	291,866,402	280,623,363	142,298,035	142,472,678	149,568,367	138,150,685	+ 8.3
P&LE	5,161,844	6,069,059	— 15.0	14,967,476	15,709,775	12,011,567	15,839,084	2,955,909	—129,309	†
Reading	16,187,350	14,816,058	+ 9.2	36,196,262	35,132,769	29,845,569	28,014,276	6,350,693	7,118,493	— 10.8
StL-SF	35,280,566	30,444,535	+ 15.8	57,879,464	52,526,268	27,031,207	29,039,650	30,848,257	23,486,618	+ 31.4
StL-SW	23,377,222	21,720,026	+ 7.6	33,336,713	30,995,243	20,287,746	17,953,922	13,048,967	13,041,321	+ .1
SAL	44,475,653	17,903,480	+148.4	68,447,675	44,107,750	32,686,017	32,062,707	35,761,658	12,045,043	+196.9
Southern	59,687,643	45,506,288	+ 31.2	108,094,938	87,883,001	72,542,416	66,222,987	35,552,522	21,660,014	+ 64.2
SPSystem	178,386,446	117,982,253	+ 51.2	279,406,001	239,205,362	142,540,642	131,058,715	136,867,359	108,146,647	+ 26.6
T&P	21,164,184	19,944,423	+ 6.1	34,624,198	33,741,723	15,533,399	15,818,371	19,090,799	17,923,352	+ 6.6
UP	106,169,528	88,599,985	+ 19.8	215,362,741	204,238,274	118,889,314	119,782,192	96,473,427	84,456,082	+ 14.3
Wabash	20,050,663	17,288,208	+ 15.9	31,839,689	30,485,748	25,453,151	26,518,656	6,386,538	3,967,092	+ 61.0

*Certain capital and other reserve funds are not included.
†Current liabilities exceeded current assets in one or both years.

MOTIVE POWER AND MODERN CARS frequently are purchased under equipment trust arrangements, but payment for fixed property improvements generally comes directly from the carriers' current earnings.

per cent above those of last year's first quarter, but with expenditures for equipment off 19.1 per cent.

The road estimate was $82 million, and it compared with actual expenditures of $74 million made by all 131 roads on road facilities during the first quarter of 1952. The estimated expenditures for equipment totaled $219 million, compared with $271 million. The four roads which failed to submit first-quarter estimates made expenditures of $2.2 million for road and $1.8 million for equipment in the first quarter of last year.

The prediction that expenditures will remain on the $1⅓ billion basis in 1953 is supported by programs under way as the year began. At their annual meeting last November, member roads of the Association of American Railroads reaffirmed their equipment program which calls for building the freight-car fleet to "not less than" 1,850,000 cars. An authoritative estimate of the prospective 1953 output has indicated that it may be expected to total about 94,500 cars—6,500 per month for the first six months, 8,500 per month for the third quarter, and 10,000 per month for the last quarter.

At an average cost of about $5,500 per car, which is on the conservative side, that would put the year's freight-car program on a $520 million basis. While the dieselization program may have passed its peak, it is still on a very high level. *Railway Age* has obtained from informed sources an estimate indicating that it will be on something like a $450 million basis this year. Thus the prospective 1953 equipment program becomes a $970 million program. If road expenditures rise no higher than the $380 million spent last year, the total 1953 outlays would aggregate about $1,350 million.

Prospects for carrying out the 1953 program would seem to be better than those of recent years, because both the materials supply and earnings situations have improved. As to the materials situation, the more plentiful supplies which are expected generally this year should make more effective the appeals of the Defense Transport Administration. In its annual report for the year ended September 30, 1952, D.T.A. identified the lack of sufficient materials for new equipment and facilities as its "major problem" in the railroad field.

"The production of new freight cars," the report said, "must not be permitted to lag, as in any greater emergency transportation facilities must be available in sufficient volume to support the nation's defense potential. . . . World War II provided concrete evidence of the necessity for appropriate advance planning."

The D.T.A. report also referred to the "incentive of tax amortization certification," which results from those provisions of the income-tax law that permit defense facilities to be amortized over a five-year period. During the year under review, D.T.A. had recommended that amortization certificates be issued with respect to equipment and facilities expected to cost nearly $1.2 billion. Whether this fast write-off arrangement will be relief for the railroads in the long run, however, depends upon whether its benefits will more than offset the loss of normal depreciation write-offs in future years.

The improved earnings situation, of course, is a factor favorable to continuance of capital expenditures on a high level. As President William T. Faricy of the Association of American Railroads has said, "good earnings mean more investment in better plant which means greater capacity and reduced cost."

But last year's net railway operating income of more than $1 billion, the best in recent years, was still only relatively good. Presentations made by the railroads in the Ex Parte 175 freight-rate case contended that it takes annual net railway operating income of $1½ billion under present conditions to keep the railroad industry on a sound financial basis.

The fork truck's popularity as freight handling device suffered no decline in '52.

RAILROAD PURCHASES

. . . Down in 1952

. . . Better in 1953

Expenditures for some machinery, signal and communications equipment above the 1951 levels; picture seems better for 1953

By FRED C. MILES and J. W. MILLIKEN
Associate Editors

Purchases of materials, supplies and fuel, plus the estimated value of equipment orders placed by Class I railroads in 1952, reached a total of slightly more than $2.4 billion. This was in spite of the fact that the value of orders for new equipment ($601 million) was the lowest for any year since 1945, with the exception of 1949, when such orders came only to about $217 million. Large decreases in diesel locomotive and freight car orders were the causes of this slump, for the amount obligated for purchases of passenger cars rose over the '51 figure.

Actually, purchases of all categories except crossties, in the "breakdown" of major classes of expenditures, were considerably below those of 1951. As other articles in this issue of *Railway Age* reveal, however, buying of every class and kind of material was not down from the preceding year.

Many factors contributed to the decrease of purchases

Palletization of the railroads' own supplies has saved a lot of money in handling charges and has enabled the carriers to better utilize storage space.

Purchases of miscellaneous materials and supplies in 1952 fell off substantially from the railroads' 1951 expenditures for such similar items.

1952 PURCHASES*

MANUFACTURED GOODS
(Excl. Equipment and Fuel)
Twelve Months Totals '52
And Other Years (000)

Year	Amt.	% Change
1946	$1,017,402	+31
1947	1,217,579	+ 9
1948	1,350,291	— 1
1949	1,077,247	+24
1950	1,131,189	+18
1951	1,554,362	—14
1952	1,332,513	

RAIL
Twelve Months Totals '52
And Other Years (000)

Year	Amt.	% Change
1946	$65,302	+10
1947	87,608	—18
1948	100,073	—28
1949	94,669	—24
1950	99,123	—27
1951	102,961	—30
1952	72,012	

CROSSTIES
Twelve Months Totals '52
And Other Years (000)

Year	Amt.	% Change
1946	$88,478	+17
1947	92,098	+13
1948	87,916	+18
1949	82,048	+26
1950	55,736	+86
1951	94,879	+ 9
1952	103,777	

OTHER MATERIAL
Twelve Months Totals '52
And Other Years (000)

Year	Amt.	% Change
1946	$ 863,622	+34
1947	1,037,873	+11
1948	1,162,302	——
1949	900,530	+28
1950	976,330	+18
1951	1,356,522	—15
1952	1,156,724	

FUEL
Twelve Months Totals '52
And Other Years (000)

Year	Amt.	% Change
1946	$553,153	— 7
1947	691,630	—25
1948	833,040	—38
1949	564,159	— 8
1950	608,719	—15
1951	621,497	—17
1952	516,321	

TOTAL
(Excl. Equip.)
Twelve Months Totals '52
And Other Years (000)

Year	Amt.	% Change
1946	$1,570,555	+18
1947	1,909,209	— 3
1948	2,183,331	—15
1949	1,641,406	+13
1950	1,739,908	+ 6
1951	2,175,859	—15
1952	1,848,834	

*November and December preliminary figures included, making 1952 totals subject to revision.

1952 INVENTORIES

RAIL
Oct. 1, '52 Compared to
Other Octs. (000)

Year	Amt.	% Change
1946	$25,783	+27
1947	28,084	+16
1948	33,163	— 1
1949	37,475	—13
1950	38,478	—15
1951	42,182	—23
1952	32,682	

CROSSTIES
Oct. 1, '52 Compared to
Other Octs. (000)

Year	Amt.	% Change
1946	$75,701	+46
1947	87,829	+26
1948	79,148	+39
1949	96,515	+14
1950	82,609	+34
1951	88,333	+25
1952	110,388	

OTHER MATERIAL
Oct. 1, '52 Compared to
Other Octs. (000)

Year	Amt.	% Change
1946	$472,764	+39
1947	558,987	+17
1948	611,887	+ 7
1949	581,945	+13
1950	511,420	+28
1951	701,572	— 7
1952	654,816	

SCRAP
Oct. 1, '52 Compared to
Other Octs. (000)

Year	Amt.	% Change
1946	$11,424	+57
1947	10,426	+72
1948	14,378	+24
1949	16,053	+11
1950	14,008	+28
1951	16,550	+ 8
1952	17,894	

FUEL
Oct. 1, '52 Compared to
Other Octs. (000)

Year	Amt.	% Change
1946	$54,797	+ 4
1947	56,629	——
1948	95,874	—41
1949	63,534	—11
1950	50,875	+12
1951	63,193	—10
1952	56,835	

TOTAL†
Oct. 1, '52 Compared to
Other Octs. (000)

Year	Amt.	% Change
1946	$640,469	+36
1947	741,955	+18
1948	834,450	+ 5
1949	795,522	+10
1950	697,390	+25
1951	911,830	— 4
1952	872,615	

†All total inventory figures taken from I.C.C. statement M-125 for the month indicated.

1952 RAILWAY PURCHASES**

	Oct. '52 (000)	Nov. '52 (000)	Dec. '52 (000)	Cumulative total, 1952 (000)
Equipment*	$ 15,840	$ 70,700	$ 49,500	$ 601,000
Rail	6,613	5,733	7,128	72,012
Crossties	7,920	6,174	7,290	103,777
All Other Material	100,569	93,935	97,776	1,156,724
Total from Manufacturers	$130,942	$176,542	$161,694	$1,933,513
Fuel	41,553	41,158	49,806	516,321
Grand Total	$172,495	$217,700	$211,500	$2,449,834

* Amount placed on order. Cumulative total adjusted to include previously unreported orders.
** Subject to revision

in 1952. The combination of the steel strike and the continued drain of the defense program on supplies of that metal were in great part responsible for the fact that purchases were not greater in 1952. Primarily, the freight traffic level in 1952 was lower than in 1951, due to a considerable degree to the steel strike, and naturally

ANNUAL PURCHASES OF EQUIPMENT—CLASS I RAILROADS

Year #	(000)	Year #	(000)
1931	$28,873	1942	$325,000†
1932	2,623	1943	247,000†
1933	5,857	1944	255,000
1934	66,850	1945	320,100
1935	35,696	1946	629,510
1936	240,594	1947	701,616
1937	194,153	1948	660,017
1938	74,006	1949	217,032
1939	188,838	1950	1,215,029
1940	264,943	1951	1,184,872
1941	414,690	1952	601,000*

*Preliminary estimates
#Estimated value of orders for new locomotives and cars
†Estimated value of orders for new locomotives and cars built by equipment builders and placed in service during 1942 and 1943

this situation cut the railroads' requirements for some supplies. Total outlays particularly reflect the fact that the railroads were unable to get enough rail to fill their requirements during 1952. In fact, rail renewals were cut about in half from the level expected when 1952 programs were mapped out.

MATERIAL HANDLING EQUIPMENT ORDERED—1952

Automotive Type Equipment*	Cranes†	Hoists**	Jacks#
427	78	293	98

*Includes fork trucks, tractors, burden carriers, crane trucks
† " locomotive and overhead traveling cranes
** " air, electric and hand-operated hoists
# " air and electric-operated jacks

Everyone, of course, is familiar with the fact that the steel shortages cut into the freight car deliveries, and also may have played a part in cutting freight car orders. Also, as was to be expected, with freight traffic declining substantially from the 1951 level, the railroads' fuel bill was below the preceding year by about $100 million. Overall, purchases of materials, supplies and fuel were down about $250 million, or about 15 per cent, from the 1951 figure.

It wasn't by any means a bad year, however, for railway suppliers. The value of purchases of maintenance-of-way work equipment, for example, was up substantially from the 1951 figure, although the number of units bought fell off somewhat. The value of this equipment, in fact, was the greatest since *Railway Age* began compiling such figures, and it looks as if 1953 expenditures for similar items may even exceed 1952 buying by five to ten per cent.

Similarly, expenditures for signaling and communications equipment in 1952 went up considerably over the 1951 figures. This was a case where the number of units bought increased greatly, not just one of a greater dollar volume of purchases. Articles elsewhere in this issue indicate just how great was this rise. For one example, the number of yard radio units installed during 1952 was up about 70 per cent from the 1951 figure.

Tie Buying Up

There are two factors which probably explain the fact that expenditures for crossties in 1952 were well above those for 1951. Crosstie renewals in 1952 rose a little from the 1951 level and renewals during 1953 are expected to be between five and ten per cent above those of the year just closed. The 1952 increase over 1951 renewals reverses a long-time downward trend in this type of activity.

While rail renewals last year were only about 50 per cent of what the railroads had hoped to accomplish, the carriers expect to try to make up for this deficiency somewhat in 1953 by laying about 1.6 million tons of new rail. Increases in rail and crosstie renewals indicates a relatively high level of maintenance-of-way activity which augurs well for the manufacturers of track material, supplies and equipment. Any substantial decline in traffic, of course, or some unforeseen event which would cut the amount of rail available to the carriers, could change this picture radically.

Carloadings May Climb

Most forecasters, including a number of railroad presidents, indicate that freight traffic in 1953 should continue at a high level. Carloadings may even climb above those of 1952. In that case it is likely that the value of equipment orders in 1953 will increase somewhat above the 1952 figures. If this is to become a fact then most of the value of those orders probably will be attributable to purchases of freight cars. The carriers have pledged that they will buy a lot more cars. If money to finance such purchases continues to be available, and there is enough steel to increase freight car output, it is very probable that orders will exceed those of 1952, but by how large a margin it is impossible to tell.

Passenger car orders in 1953 may not reach the level attained in 1952, a relatively big year in that respect by recent standards. Ordering of diesel locomotives probably will not increase much over 1952 and, in fact, may fall below that figure as many of the larger roads approach relatively complete dieselization. There is much interest, too, in what the gas turbine locomotives will do in regular service.

Purchases of material-handling equipment during 1952 held up very well. While the accompanying summary of orders for such equipment is not based on returns from all roads, those carriers responsible for the majority of the purchases are included. It seems from the returns received by *Railway Age* that the fork truck has replaced the burden carrier as the equipment most in demand for older freighthouses. (In the larger new freighthouses the tow-chain conveyor seems to be "getting the play.") However, the position of the burden carrier was relatively better in 1952 than it was in 1951, due probably to the fact that electric models of this type of equipment seem to be gaining in popularity.

MORE PASSENGERS PER CAR, and longer trips per passenger are direct results of the railroads' efforts to build useful and patronized passenger services into a self-supporting enterprise. The Santa Fe's "El Capitan."

666 Passenger-Train Cars Ordered in 1952

- ***Successful new services added***
- ***Equipment orders increasing***
- ***More new and specialized equipment in service***
- ***Utility commissioners recognize need for discontinuing economically useless services***
- ***Merchandising techniques improve***

By J. S. GALLAGHER, JR. and FRED C. MILES
Associate Editors

Passenger-train cars, ordered in 1952 for service in the United States totaled 666 according to the American Railway Car Institute. This is the largest number of such cars ordered in any single year since 1946, when 1,238 were ordered. Passenger-train cars ordered in this country last year are listed by purchaser in an accompanying table. Because of security restrictions, *Railway Age* is unable to tabulate equipment ordered for foreign or domestic service by the Transportation Corps.

Analyses and summaries of passenger-train cars delivered and ordered from 1935 through 1952 are given in two additional tables. The detailed list of cars ordered last year was compiled by *Railway Age* from data submitted by purchasers which were checked and amplified with information received from car builders through the cooperation and assistance of the Car Institute.

The year 1952 was marked by healthy pruning and vigorous new growth in the railroad passenger business—and by encouraging state governmental recognition that the continued operation of uneconomical passenger trains benefits no one and restricts the industry's ability to finance and operate services which the public can and will support.

Easily, the outstanding event of the year was the action of the National Association of Railroad & Utility Commissioners in preparing eight specific recommendations (*Railway Age*, November 17, 1952, page 67) designed to assist the railroads in reducing or eliminating their chronic postwar passenger service deficits, which in 1951 reached an all-time high, according to Interstate Commerce Commission reports.

This forthright action was "probably the most important recorded change in the *attitude* of public regulators toward the railroads in the whole history of regulation." These recommendations suggest that the railroads seek authority—and that the individual utility commissions grant permission—to discontinue any passenger train which is currently producing revenues "substantially less than direct operating expenses."

With the aid of the state utility commissions and the I.C.C., big strides were made during the year in eliminating unprofitable and economically useless services. The effectiveness of this action is shown by I.C.C. reports of passenger train-miles operated which, for the first nine months of 1952, showed about a 4 per cent decline. The decline in recent months has been even more marked.

With the problem of the money-losing "klunkers" gradually being solved, increased managerial attention is being devoted to improving the operating performance of the remaining services—services for which there is need, and which do have some possibility of operating at a profit. The I.C.C. reports that the average num-

A NEW TOOL for reducing costs and improving passenger revenues, the "RDC" car is helping the railroads turn passenger losses into passenger profits. A view on the Lehigh Valley near Hazelton, Pa.

ber of passengers handled per train-mile increased from 96.1 in the first 9 months of 1951 to 100.8 for the first 9 months of 1952. This is an indication that results are being produced. Although the total number of passengers handled during that period declined a little over 2 per cent, gross passenger revenues increased slightly more than 3 per cent. The gradual discontinuation of outmoded "locals" leaves its mark in the continually increasing distance traveled by the "average" passenger.

A marked development of the past year was the emergence of the Budd Company's self-propelled rail diesel passenger cars ("RDC cars") as a means of building a new profitable passenger business. Although these cars have been in active service for over 3½ years, their principal use up to this past year was as substitutes for trains formerly operated with other types of equipment. They have proved highly successful in reducing expenses and improving revenue in such substitute services. This year the railroads undertook their use as a means for providing entirely new services—in many cases, services never before offered—tailored to specific markets. Among the railroads which have pioneered in this type of development—using "RDC" cars—are the Boston & Maine; New Haven; New York Central; Baltimore & Ohio; and the Santa Fe.

The New Haven, by way of an example, reestablished passenger service on its 72-mile line between Worcester, Mass., and New London, Conn., using a single "RDC-1" car. The last local passenger service operated over this line was discontinued 25 years ago. During an 11-week trial period last summer, this new service produced a gross revenue of $35,801 at an out-of-pocket expense (excluding depreciation) of $14,310. The service proved so popular, and successful financially, that last fall the original two round-trips were expanded to three.

All railroads which have embarked on such programs of adding developmental passenger services report they have received wholehearted cooperation from local communities and state utility boards in getting the experimental services established on a paying basis.

The past year saw the advent of several new dome-car services—all centered around St. Louis—with a promise of still more to come. The Missouri Pacific added "planetarium-dome" coaches to its "Texas Eagles" between St. Louis and Fort Worth-San Antonio, Texas, and to the "Missouri River Eagle" between St. Louis and Omaha, Neb. The Wabash added a dome chair car to its St. Louis-Kansas City streamliner "City of Kansas City."

The newest version of the dome car—with full-length dome—made its appearance at the end of the year when the Milwaukee exhibited its new "super dome" cars. These cars started operating on the "Twin City Hiawathas" and the "Olympian Hiawatha" January 1, 1953.

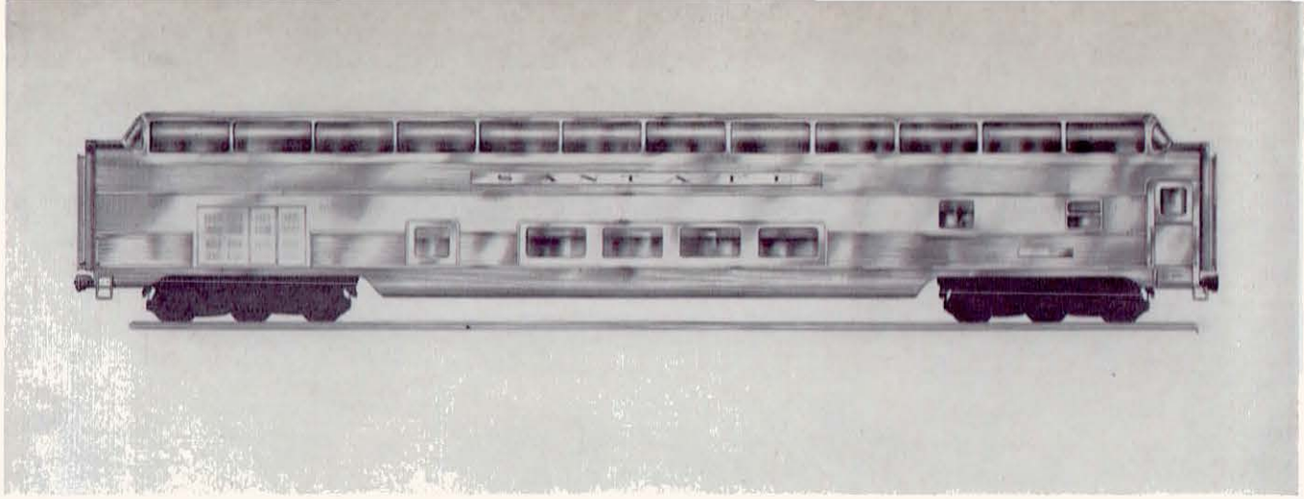
As a promise of what is to come, the Santa Fe announced an order for 113 new passenger cars, including eight full-length dome cars for use on its Chicago-Los Angeles "El Capitan" coach streamliner, and on the "Kansas Cityan" and "Chicagoan," daylight streamliners between Chicago and Kansas City. The Northern Pacific announced plans to order ten dome coaches and six dome sleeping cars for use on its expedited "North Coast Limited," Chicago-Seattle streamliner.

The Pennsylvania outfitted its New York-Washington "Congressionals" and Washington-Boston "Senators" with all new equipment—representing 64 new cars in all.

A new approach to the problem of how to merchandise railroad passenger travel to the casual and family-travel market was explored during the latter half of the year by a large group of eastern railroads through the medium of a family-fare plan. More than just a fare reduction, this plan is a merchandising technique aimed directly at the family. The purpose of the plan is to make family travel less expensive in order to break into the cost-conscious, private automobile family-travel market. Although it is still early to evaluate full effects of the plan, preliminary indications are that it has attracted new traffic and that these new passengers made trips much longer than the average. The experiment is being continued into 1953.

A new ticket office merchandising technique was evolved by the Southern Pacific with its telephone order ticket office (*Railway Age*, December 15, 1952, page 49). Designed to overcome the traditional inelasticity of the average city ticket office, this installation approaches the over-the-counter sales problem from a different point of view.

Another merchandising development was the Milwau-



WHAT LIES AHEAD: Full-length dome cars are the coming attraction for railroad passenger travel. This is an artist's sketch of equipment scheduled by Budd for delivery to the Santa Fe later this year.

Passenger-Train Car Orders — For Service in the United States

Purchaser	No.	Class	Length Ft.	Length In.	Construction	Seating Capacity	Weight	Date of Order	Date of Delivery	Builder
Atchison, Topeka & Santa Fe...	10	R. P. O.	63	0	S. Steel	..	96,700	September	Sept. '53	Budd
	50	Baggage	73	0	S. Steel	..	95,300	September	Sept. '53	Budd
	45	Chair	85	0	S. Steel	48	119,700	September	Oct. '53	Budd
	8	Dome-Chair	85	0	S. Steel	104	183,600	September	Oct. '53	Budd
Atlanta & West Point.....	1	Coach	85	0	S. Steel	58	112,100	November	Nov. '53	Budd
Baltimore & Ohio.....	11	Sleeping	85	0	S. Steel	24	129,000	November	Dec. '53	Budd
Canadian National (Lines in United States).....	104	Sleeping	85	0	Steel Frame	..	.....	October	1953-54	Pullman-Standard
	6	Dinette	85	0	Steel Frame	26	.....	October	1953-54	Pullman-Standard
	14	Dining	85	0	Steel Frame	40	.....	October	1953-54	Pullman-Standard
	9	Cafe Parlor	85	0	Steel Frame	..	.....	October	1953-54	Pullman-Standard
	6	Parlor	85	0	Steel Frame	..	.....	October	1953-54	Pullman-Standard
Chicago, Burlington & Quincy .	10	Gallery Coach	85	0	S. Steel	148	131,600	April	Apr. '53	Budd
Chicago & Eastern Illinois.....	10	Coach	85	0	S. Steel	58	112,100	September	Sept. '53	Budd
Chicago, Rock Island & Pacific.	7	R. P. O.	60	0	S. Steel	..	97,000	November	4th qtr. '53	Budd
	5	Baggage	73	10	S. Steel	..	95,600	November	4th qtr.	Budd
Grand Trunk Western.....	5	Coach	85	0	Steel	76	121,954	March	Mar. '53	Pullman-Standard
	2	Buff.-Parlor	85	0	Steel	30	131,500	November	1953-54	Pullman-Standard
Illinois Central.....	6	Sleeping	85	0	Steel	..	138,200	July	Oct. '53	Pullman-Standard
Long Island.....	20	M.-U. Coach	85	9	Steel	128	120,300	July	4th qtr. '53	Pullman-Standard
Louisville & Nashville.....	1	Coach	85	0	S. Steel	58	112,100	November	.....	Budd
New York, New Haven & Hartford.....	93	M.-U. Coach	85	9	Steel	120	160,000	October	1953	Pullman-Standard
	7	M.-U. Coach	85	9	Steel	92	156,000	October	1953	Pullman-Standard
Northern Pacific.....	2	Dining	85	0	Steel	40	.....	October	.....	Pullman-Standard
Union Pacific	25	Baggage	85	0	.....	..	.....	November	.....	Amer. Car & Fdy.
	2	Cafe Lnge.	85	0	.....	..	.....	November	.....	Amer. Car & Fdy.
	35	Chair	85	0	.....	..	.....	November	.....	Amer. Car & Fdy.
	10	Obs.-Sleeping	85	0	.....	..	.....	November	.....	Amer. Car & Fdy.
	2	Club Lnge.	85	0	.....	..	.....	November	.....	Amer. Car & Fdy.

Rail Motor Cars — For Service in the United States

Purchaser	No.	Type of Power	Horsepower	Seating Capacity	Length of Baggage-Mail Room	Weight	Date of Order	Date of Delivery	Builder
Atchison, Topeka & Santa Fe .	2	RDC-1	550	90	.....	113,000	February	May	Budd
Baltimore & Ohio.....	3	RDC-1	550	89	.....	113,000	September	June '53	Budd
Boston & Maine.....	2	RDC-1	550	89	.....	113,000	January	April	Budd
	1	RDC-3	550	48	Baggage 16 6 Mail 15 0	117,000	January	May	Budd
	2	RDC-1	550	89	.....	113,000	September	.....	Budd
	1	RDC-2	550	70	17 0	114,000	September	.....	Budd
New York Central.....	6	RDC-1	550	89	.. ..	113,000	February	1952	Budd
	1	RDC-3	550	48	Baggage 16 6 Mail 15 0	117,000	February	March	Budd
	1	RDC-1	550	102	.. ..	.....	September	1953	Budd
	1	RDC-3	550	48	Baggage 16 6 Mail 16 10	.....	September	1953	Budd
New York, New Haven & Hartford.....	29	RDC-1	550	89	.. ..	113,000	1952	.....	Budd
	2	RDC-2	550	70	17 0	114,000	August	September	Budd
	6	RDC-3	550	48	Baggage 16 6 Mail 15 0	117,000	June-Aug.	.....	Budd
	3	RDC-4	550	..	Baggage 30 6 Mail 30 4	107,000	August	.....	Budd
	10	.....	...	..	.....	.....	1952	.....	Mack
Unspecified.....	1	RDC-3	550	48	Baggage 16 6 Mail 15 0	117,000	December	.....	Budd

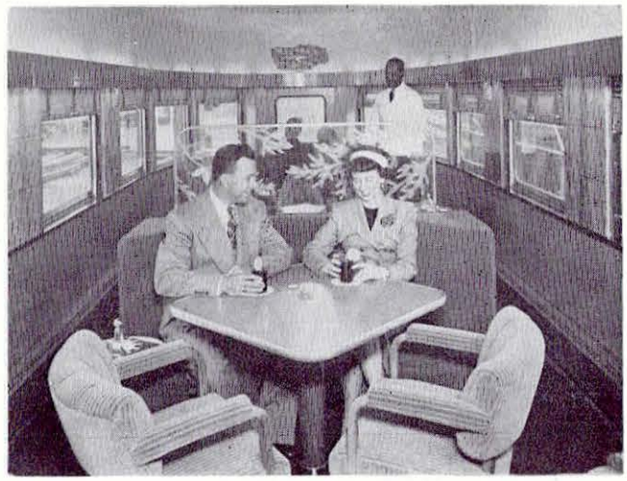
Canada

Purchaser	No.	Class	Length Ft.	Length In.	Construction	Seating Capacity	Weight	Date of Order	Date of Delivery	Builder
Canadian National.....	161	Coach	85	0	Steel	76	.....	October	1954	Can. Car & Fdy.
	30	Baggage	73	6	Steel	..	126,000	November	Aug. '53	National Steel Car
Canadian Pacific.....	40	Coach	83	10	Steel	103	.....	August	1953	Can. Car & Fdy.
	40	Bag.-Exp.	81	0	Steel	..	.....	November	1953	Can. Car & Fdy.
Ontario Northland.....	3	Baggage	73	6	Steel	..	126,000	March	November	National Steel Car

THE FIRST FULL-LENGTH DOME CARS were put in service on the Milwaukee on January 1.

kee's concentration on railroad ticket agents and passenger representatives as *salesmen* who seek and route passengers. In a move designed to gain their support in routing passengers via its line the Milwaukee brought a group of these railroad employees from the East and South to Chicago to see its new "super dome" cars prior to their being placed in service.

In recognition of the merchandising value of a "good product," the Pennsylvania introduced service supervisors to oversee the standards of performance on certain of its east-west streamliners. One supervisor is assigned to each train (including all sets of equipment used on a selected "name" train) for the purpose of seeing that the cars are properly cleaned and maintained, and that the standards of service and performance in all aspects of the operation are maintained at consistently high levels.



COMFORT AND SIMPLICITY characterize the new passenger car interiors.

Number and Classification of Passenger-Train Cars Delivered for Domestic Use

(Carbuilder and Railroad Shops)

Year	Coach	Coach Comb.	Bag. & Exp.#	Sleeping & Comb.	Parlor, Club, etc.	Dining	Postal & Comb	Other	Troop Hosp.	Troop Sleep.	Troop Kitch.	Total
1952	10	14	4	22	9	11	1	46	..	..	..	117
1951	89	4	34	14	27	6	5	0	0	0	0	179
1950	368	11	60	380	33	61	43	8	0	0	0	964
1949	190	9	16	517	36	125	27	13	0	0	0	933
1948	235	21	25	368	104	115	20	3	0	0	0	891
1947	412	57	119	67	16	117	72	1	0	0	0	861
1946	356	9	59	2	12	9	11	1	0	822	56	1,337
1945	3	0	13	0	0	0	10	0	193	368	344	931
1944	0	0	3	0	0	0	5	0	17	558	420	1,003
1943	0	0	0	3	0	0	4	0	0	652	26	685
1942	111	2	82	157	2	18	22	0	0	0	24	418
1941	201	10	2	49	22	35	20	3	7	0	0	349
1940	69	10	19	117	8	20	14	0	0	0	0	257
1939	98	12	29	80	18	37	2	0	0	0	0	276
1938	136	37	38	156	27	33	5	2	0	0	0	434
1937	299	56	71	33	20	37	10	103	0	0	0	629
1936	84	19	33	27	15	9	2	2	0	0	0	191
1935	107	25	0	0	14	2	1	56	0	0	0	205

#Including express-refrigerator cars.
Source: American Railway Car Institute. 1952 subject to revision.

Number and Classification of Passenger-Train Cars Ordered for Domestic Use

(Carbuilder and Railroad Shops)

Year	Coach	Coach Comb.	Bag & Exp.	Exp., Refrig. & Milk	Sleeping & Comb.	Parlor, Club, etc.	Dining	Postal & Comb.	Other	Interurban & M. U.	Self. Prop.	Troop Hosp.	Troop Sleep.	Troop Kitch.	Total
1952	107	0	80	0	131	27	24	17	89	120	71	..	..	..	666
1951	50	14	10	0	66	26	19	3	1	0	7	64	0	1	261
1950	21	0	38	0	1	0	0	10	1	0	31	0	0	0	102
1949	46	0	6	0	30	6	14	6	1	0	0	0	0	0	109
1948	143	0	51	0	156	20	25	10	1	100	0	0	0	0	506
1947	132	0	22	0	72	36	19	29	4	0	2	0	0	0	316
1946	311	40	22	0	587	53	143	46	28	8	0	0	0	0	1,238
1945	296	17	134	25	510	84	98	54	67	8	0	100	1,200	400	2,993
1944	461	36	20	0	26	16	53	12	0	1	0	100	0	0	725
1943	14	2	3	0	0	0	4	12	0	0	0	10	1,200	440	1,685
1942	0	1	2	0	0	0	0	0	0	1	0	0	0	30	34
1941	164	13	69	0	197	16	36	46	0	1	0	7	0	0	549
1940	220	26	8	0	53	6	48	13	2	3	0	0	0	0	379
1939	97	20	9	0	125	18	38	12	0	2	0	0	0	0	321
1938	85	28	42	0	86	10	15	10	0	0	2	0	0	0	278
1937	136	23	58	110	171	18	37	8	6	0	0	0	0	0	567
1936	294	36	35	0	5	26	44	10	1	0	0	0	0	0	451
1935	14	16	7	55	18	6	10	7	0	0	0	0	0	0	133

Source: American Railway Car Institute. 1952 subject to revision.

Earnings, Near-Term Outlook . . .

Strengthen Railroad Stocks

Industry's financial year highlighted by increased investor interest, greater activity, bigger dividends, in equity securities

By GARDNER C. HUDSON
News and Financial Editor

Improvement—modest, but improvement nonetheless—in the position of railroad equity securities—preferred and common stocks—was the outstanding development of a year that was, otherwise, somewhat uneventful financially for the industry as a whole.

This assertion of improvement is based on three principal factors:

1. *A substantial increase in market prices of rail stocks.* The Dow-Jones rail average, which stood at 81.70 at the end of 1951, had risen to 111.27 at the end of 1952, an increase of 36 per cent, which contrasts with an increase of only 8 per cent in the Dow-Jones industrial stock average within the same period. *Railway Age's* own index of the market prices of 20 representative railway stocks, which stood at 54.39 on January 2, 1952, was 69.32 on December 30, a rise of 27.5 per cent.

2. *Increased ownership of railroad stocks by investment companies.* Writing in *Railway Age* last December 1 (page 98), Henry Ansbacher Long, independent authority on such companies, reported that their holdings of rail stocks as of September 1952 totaled close to $220 million, compared with $120 million two years earlier. In the same period, percentage of total investment fund assets invested in railroad equities increased from 3.8 to about 4.5. While part of the increase in dollar value is due, Mr. Long noted, to higher market prices, some of it represents new purchases; as of last September, preferred or common stocks of at least 35 major Class I railroads were each represented in portfolios of two or more investment concerns.

3. *Increased activity in stock splits, stock dividends, and employee stock purchase plans.* This activity, which is outlined in more detail below, is one which can be successfully undertaken only when the stocks involved are in sufficiently strong position to be attractive to present owners or to potential new investors.

Tables accompanying this article were prepared by Ann Ortlinghaus, of the *Railway Age* staff.

Why the Improvement?

Behind the improvement in railroad stock position signified by these three factors lie a variety of reasons, principally, probably, the industry's relatively favorable financial showing throughout 1952, and what most observers seem to consider a satisfactory, if not definitely optimistic, outlook for at least the first part of 1953.

As is pointed out in other articles in this issue, railroad traffic in 1952 was below that for either 1951 or 1950, thanks in large part to the prolonged summer steel strike. But because of the Interstate Commerce Commission's various decisions (March 1951; August 1951;

Representative Equipment Trust Issues Sold in 1952

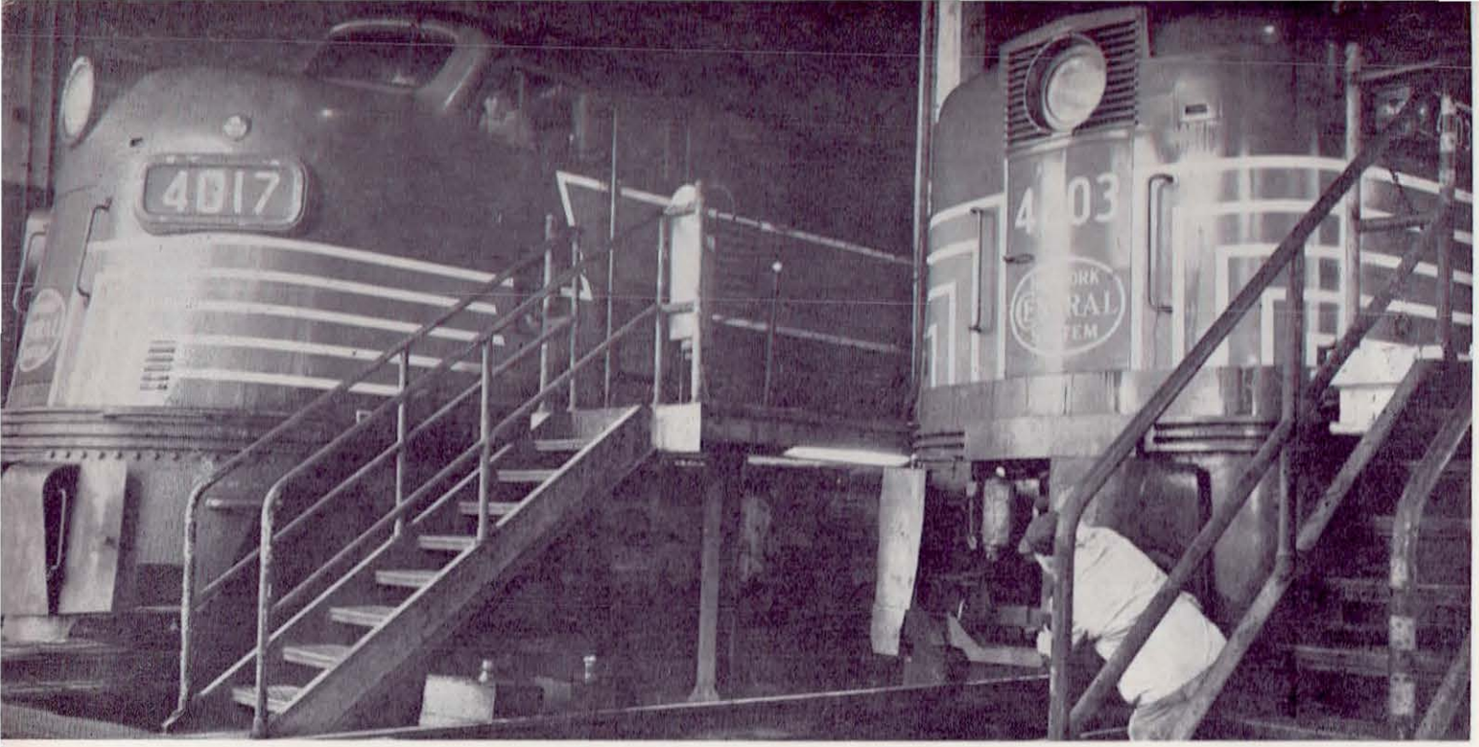
Road	Maturity	Amount	Int. Rate%	Issue Sold at Price	Cost	Purchaser
Baltimore & Ohio, Ser. DD	1953–1967	$3,870,000	3	99.0516	3.17	Salomon Bros. & Hutzler, et al.
Ser. EE	1953–1967	3,960,000	3⅛	99.5633	3.22	Halsey, Stuart & Co., et al.
Ser. FF	1953–1967	5,505,000	3⅛	99.84	3.17	Salomon Bros. & Hutzler, et al.
Bangor & Aroostook	1953–1967	4,000,000	3¼	99.192	3.38	Halsey, Stuart & Co.
Central of Georgia, Ser. W	1953–1967	2,325,000	3¼	99.778	3.31	Salomon Bros. & Hutzler, et al.
Ser. X	1953–1967	2,775,000	3⅜	99.6665	3.46	Salomon Bros. & Hutzler, et al.
Central of New Jersey	1953–1967	2,895,000	3½	100.5173	3.45	Salomon Bros. & Hutzler, et al.
Chesapeake & Ohio	1952–1967	8,250,000	2⅞	99.335	2.98	Salomon Bros. & Hutzler, et al.
	1952–1967	9,450,000	2⅞	99.659	2.93	Halsey, Stuart & Co., et al.
	1952–1967	9,300,000	2⅞	99.423	2.97	Halsey, Stuart & Co., et al.
	1953–1967	6,000,000	3⅛	100.2256	3.09	Salomon Bros. & Hutzler, et al.
	1953–1967	5,250,000	3¼	100.4693	3.17	Halsey, Stuart & Co., et al.
Chicago & Eastern Illinois, Ser. I	1952–1967	2,100,000	3⅛	99.566	3.19	Salomon Bros. & Hutzler, et al.
Chicago & North Western	1953–1967	6,825,000	3	99.662	3.08	Bear, Stearns & Co., et al.
	1953–1967	6,555,000	3⅛	99.13	3.29	Salomon Bros. & Hutzler, et al.
Chicago, Indianapolis & Louisville	1953–1967	1,500,000	3¼	99.379	3.37	Halsey, Stuart & Co.
Chicago, Milw., St. P. & Pacific, Ser. PP	1952–1967	2,400,000	2⅞	99.009	3.03	Halsey, Stuart & Co., et al.
Ser. QQ	1953–1967	3,990,000	3⅛	99.05	3.28	Halsey, Stuart & Co., et al.
Chicago, Rock Is. & Pacific, Ser. L	1952–1967	4,950,000	3	99.417	3.09	Salomon Bros. & Hutzler
Ser. M	1952–1967	6,000,000	2¾	99.071	2.90	Salomon Bros. & Hutzler
Ser. N	1953–1964	2,400,000	2¾	99.324	2.88	Halsey, Stuart & Co.
Chicago, St. P., Minn. & Omaha	1953–1967	990,000	3¼	99.663	3.33	R. W. Pressprich & Co., et al.
Delaware, Lackawanna & Western, Ser. K	1953–1967	2,970,000	3	99.058	3.17	Salomon Bros. & Hutzler, et al.
Denver & Rio Grande Western, Ser. R	1952–1967	4,440,000	2¾	99.147	2.88	Salomon Bros. & Hutzler, et al.
Erie	1952–1962	1,800,000	2⅝	99.055	2.83	Halsey, Stuart & Co., et al.
	1953–1962	2,880,000	2⅞	99.031	3.09	Halsey, Stuart & Co., et al.
Gulf, Mobile & Ohio, Ser. F	1953–1965	4,992,000	3	99.26	3.13	Salomon Bros. & Hutzler, et al.
Illinois Central, Ser. HH	1952–1967	4,110,000	2⅞	99.549	2.95	Halsey, Stuart & Co., et al.
Ser. 35	1952–1967	4,950,000	2¾	99.043	2.90	Halsey, Stuart & Co., et al.
Illinois Terminal, Ser. E	1953–1962	1,660,000	3	98.1895	3.41	Mercantile Trust Company
Louisville & Nashville, Ser. L	1953–1967	9,570,000	2⅞	99.6786	2.95	Salomon Bros. & Hutzler, et. al.
Minneapolis, St. Paul & S. Ste. Marie, Ser. A	1953–1967	2,850,000	3⅛	99.0369	3.28	Halsey, Stuart & Co., et al.
Missouri-Kansas-Texas	1952–1967	3,300,000	3⅛	98.555	3.36	Salomon Bros. & Hutzler, et al.
Missouri Pacific, Ser. RR	1953–1967	3,675,000	3⅛	99.689	3.20	Halsey, Stuart & Co., et al.
Ser. SS	1953–1967	2,700,000	3	99.42	3.11	Halsey, Stuart & Co., et al.
Ser. TT	1953–1967	1,875,000	3⅛	99.3163	3.26	Salomon Bros. & Hutzler, et al.
Nashville, Chatt. & St. Louis, Ser. H	1953–1967	2,640,000	2⅞	99.619	2.94	Halsey, Stuart & Co., et al
New York Central	1953–1967	8,850,000	3⅜	99.66	3.46	Halsey, Stuart & Co., et al.
	1953–1967	5,220,000	3⅛	99.0366	3.30	Halsey, Stuart & Co., et al.
	1953–1967	8,475,000	3¼	99.38267	3.37	Halsey, Stuart & Co., et al.
Northern Pacific	1953–1967	6,375,000	2⅞	99.149	3.03	Halsey, Stuart & Co., et al.
Pittsburgh & Lake Erie	1953–1967	2,460,000	2¾	99.021	2.92	Halsey, Stuart & Co., et al.
	1953–1967	8,850,000	3	99.7993	3.05	Salomon Bros. & Hutzler, et al.
Reading, Ser. T	1952–1967	8,340,000	2⅞	99.46733	2.96	Salomon Bros. & Hutzler, et al.
St. Louis, Brownsville & Mexico, Ser. EE	1953–1962	2,450,000	3⅛	99.4105	3.28	Halsey, Stuart & Co., et al.
St. Louis-San Francisco, Ser. K	1953–1967	2,805,000	2⅞	99.4243	2.98	Salomon, Bros. & Hutzler, et al.
Seaboard Air Line, Ser. L	1952–1967	15,000,000	2⅞	99.0337	3.03	Salomon Bros. & Hutzler, et al.
Ser. M	1953–1967	5,700,000	2⅞	99.5216	2.95	Salomon Bros. & Hutzler, et at
Southern, Ser. SS	1952–1967	5,850,000	2⅞	99.498	2.95	Halsey, Stuart & Co., et al.
Southern Pacific, Ser. HH	1953–1962	8,170,000	2¾	99.012	2.98	Halsey, Stuart & Co., et al.
Tennessee Central	1952–1967	634,000*	4	Par	....	Reconstruction Finance Corp.
	1953–1968	980,000*	4	Par	....	Reconstruction Finance Corp.
Virginian, Ser. B	1953–1967	1,350,000	2⅝	99.097	2.78	R. W. Pressprich & Co., et al.
Wabash, Ser. D	1953–1968	6,360,000	2¾	98.83	2.94	Halsey, Stuart & Co., et al

*Equipment trust notes.

Dividend Changes, 1951-1952

(Unless otherwise noted, figures apply to common stock)

	Dividends Paid 1952	1951	In-crease	De-crease	
Ann Arbor	....	$25.00	....	$25.00	
Atchison, Topeka & Santa Fe	$7.00	4.50	$2.50	....	1951 figure adjusted on basis of stock after 2-for-1 split.
Atlanta & West Point	4.00	2.00	2.00	....	
Atlantic Coast Line	6.00	5.00	1.00	....	
Baltimore & Ohio	.75	....	.75	....	First since 1931.
Boston & Maine	....	....	....	....	Declared $1 on common and $5.58 on preferred in 1951, but not paid because of action brought by minority stockholders' group.
Chesapeake & Ohio	3.00	2.25	.75	....	
Chicago & Eastern Illinois, Class A	4.00	2.00	2.00	....	1952 figure includes $2 payable in common stock, clearing arrears.
Chicago & North Western, Pref.	2.55	....	2.55	....	
Chicago, Burlington & Quincy	7.50	7.00	.50	....	
Chicago Great Western, Pref.	3.82½	5.62½	....	1.80	
Chicago, Milw., St. Paul & Pacific	1.00	2.00	....	1.00	
Chicago, Rock Island & Pacific	4.00	3.25	.75	....	
Colorado & Southern, 4% 1st Pref.	2.00	....	2.00	....	First since 1931.
Copper Range, 5% Pref.	3.50	1.50	2.00	....	
Denver & Rio Grande Western:					
Common Escrow Ctfs.	4.00	3.00	1.00	....	
Detroit & Mackinac	....	....	....	....	Declared $2 on 5% non-cumulative preferred, payable Jan. 15, 1953; first since 1921.
Illinois Central	3.50	3.00	.50	....	
Illinois Terminal	.40	.80	....	.40	
International of Central America, 5% Pref.	1.25	....	1.25	....	On arrears.
Louisville & Nashville	4.50	4.00	.50	....	
Minneapolis & St. Louis	1.10	1.00	.10	....	
Missouri-Kansas-Texas, 7% Pref. A	....	....	....	....	$1.25, declared payable Jan. 5, 1953, on arrears amounting to $147.50.
New York, Chicago & St. Louis	2.00	....	2.00	....	Initial payment Jan. 1, 1952, after 5-for-1 split.
6% Pref.	6.00	51.00	....	45.00	1951 payments included $45 as final payment on arrears.
New York, New Haven & Hartford:					
5% Pref. A	9.00	5.00	4.00	....	On arrears.
Norfolk Southern	3.10	3.00	.10	....	1952 figure adjusted for 2-for-1 stock split.
Northern Pacific	3.00	2.25	.75	....	
Piedmont & Northern	6.00	5.00	1.00	....	
Richmond, Fredericksburg & Potomac:					
Common	4.00	3.75	.25	....	
Dividend Obligation	4.00	3.75	.25	....	
7% Preferred	4.00	3.75	.25	....	
6% Preferred	4.00	3.75	.25	....	
St. Louis-San Francisco	2.00	2.50	....	.50	
Seaboard Air Line	5.25	4.25	1.00	....	
Southern Pacific	5.75	5.50	.25	....	1952 figure adjusted for 2-for-1 stock split.
Spokane International, Common Escrow	4.00	2.50	1.50	....	
Tennessee, Alabama & Georgia	.75	.60	.15	....	
Texas & Pacific	7.00	6.00	1.00	....	
Virginian	2.50	3.00	....	.50	
Wabash	3.00	2.50	.50	....	
Western of Alabama	8.00	7.00	1.00	....	



Capital funds for purchase of locomotives and cars continued to be available in good volume throughout 1952 — although at somewhat higher interest rates—from sale of equipment trust certificates . . .

New Issues of Railroad Securities Offered for Sale in the United States, 1934-1952†

(Amounts in thousands of dollars)

Year	Bonds	Stock	Railroad total	Total all industries	Railroad as per cent of total
1934.....	$176,423	....	$176,423	$397,240	44.4
1935.....	126,031	....	126,031	2,331,630	5.4
1936.....	793,618	$3,838	797,456	4,571,670	17.4
1937.....	344,257	....	344,257	2,309,524	14.9
1938.....	54,873	....	54,873	2,154,664	2.5
1939.....	185,474	233	185,707	2,164,007	8.6
1940.....	323,912	....	323,912	2,677,173	12.1
1941.....	366,313	....	366,313	2,666,887	13.7
1942.....	47,726	....	47,726	1,062,288	4.5
1943.....	161,179	....	161,179	1,169,692	13.8
1944.....	609,010	350	609,360	3,201,891	19.0
1945.....	1,453,517	504	1,454,021	6,010,985	24.2
1946.....	711,119	....	711,119	6,899,646	10.3
1947.....	285,680	....	285,680	6,576,824	4.3
1948.....	623,348	....	623,348	7,077,820	8.8
1949.....	459,982	....	459,982	6,051,550	7.6
1950.....	554,100	....	554,100	6,361,043	8.7
1951.....	330,021	5,066	335,087	7,741,099	4.3
1952*.....	432,309	....	432,309	8,236,500	5.3

*10 months total.
†Compiled by Securities and Exchange Commission.

and April 1952) in the Ex Parte 175 rate increase case, the rate level throughout the year was higher than that which prevailed in 1951. Consequently, gross revenues, even on smaller traffic, showed a modest gain.

On the other hand, as the payoff for the roads' huge postwar capital expenditures, operating expenses were held at just about 1951 levels, in spite of quarterly "cost of living" increases, aggregating 7 cents and averaging 4¾ cents, in hourly wages of employees. As a result, both net railway operating income and net income were substantially higher than in 1951.

Another factor which undoubtedly had some influence with investors was the comparative quiesence, especially in the second half of 1952, of the railroads' whole labor situation; the May wage settlement with conductors, engineers and firemen had undoubtedly been discounted by investors long before it became a reality, while the presence or absence of a union shop in an industry already heavily unionized probably has little or no bearing on security values.

Though there are dissenting opinions, the outlook for at least the first part of 1953 appears to offer further grounds for encouragement. Assuming a sustained high level of general business activity, traffic should continue at reasonably high levels; the higher rates authorized in Ex Parte 175 will remain in effect throughout the whole of 1953; and the labor situation is not likely to be seriously disturbed prior to expiration on September 30 of many of the present wage contracts—though there may be further "cost of living" boosts in hourly wage rates, and there is always the possibility that union demands for so-called "improvement factor" wage increases will prove to be a disturbing element.

Finally, there now appears to be the best chance in more than a decade of some action by Congress, either in 1953 or 1954, to change the country's basic transportation law in such a way as to relieve the railroads of some of the outdated regulations under which they now operate, and to give them a greater degree of equality with competitive forms of transportation. Almost any such action would be "bullish" so far as railroad securities are concerned; how "bullish" will depend largely upon how soon the action is taken, and how far it goes toward meeting the basic program now being outlined by railroad spokesmen.

Outlook for the Longer Term

The longer-term outlook, on the other hand, is clouded with uncertainty—uncertainty as to levels of business activity and therefore of railroad traffic; uncertainty as to legislative action by Congress and its effect; and uncertainty as to new demands by railroad labor.

Even for the near term, there are those who are not inclined to optimism. Mr. Long, in his article cited above, quotes one investment fund executive as anticipating "some decline in railroad operations" in 1953 because he anticipates "some readjustment of the previous excessive stimulation in the capital goods industries." At least one major railroad has taken cognizance of the possibility of "some business recession" during the last half of 1953. And the Railroad Securities Committee of the Investment Bankers Association of America recently reminded members of that association that "favorable 1952 financial results are not all they seem. Appraised

. . . but with few exceptions railroads had to depend on their own earnings to provide funds for improvements and additions to fixed facilities of all types.

in terms of return on railroad property investment or in terms of purchasing power, railroad earnings are still inadequate."

Changes in Stock Capitalization

Largest of the several changes in railroad stock capitalization during 1952 was the Southern Pacific's 2-for-1 split of its capital stock, which involved issuance of more than 4.5 million new shares. Of these, 4,388,453 shares went to public holders of previously existing SP stock; 138,862 shares were retained by the company for use in conversion of its convertible 3 per cent debentures, which, although not due until April 1, 1960, have just been called for redemption on January 28, 1953, with conversion rights expiring on January 23.

The Norfolk Southern also split its common stock 2-for-1, issuing 195,166 new shares to stockholders on a share-for-share basis.

Pending before the I.C.C. at the end of the year were applications from the Atlanta & St. Andrews Bay—one of the country's very few wholly debt-free railroads—for authority to make a 4-for-1 split; and from the Toledo, Peoria & Western for an 1,800-for-1 split. This latter action, if approved, would increase the TP&W's capital stock from 50 shares of $100 par value to 90,000 shares of $40 par value. Directors of the Kansas City Southern approved a 2-for-1 split of that company's common and proferred stock.

The Seaboard Air Line reduced its stock capitalization to common shares only, by calling for redemption all outstanding shares of its non-cumulative 5 per cent series A preferred.

"To conserve cash," a stock dividend of 41,487 shares of common stock was declared by the Chicago & Eastern Illinois to clear up an accumulated dividend of $2 on its Class A preferred; while the Conemaugh & Black Lick (wholly owned by the Bethlehem Steel Company) doubled its capitalization by issuing 5,000 new shares of $100 par common stock as a stock dividend.

A spreading development in railroad financing was the creation by several railroads of stock acquisition plans for officers and/or employees. Great Northern and Lehigh Valley plans, involving, respectively, 150,000 shares of preferred and 36,000 shares of common, provide for options limited to officers and key employees, with the announced purpose, in both cases, of giving such officers and key employees "additional incentive" to promote the interests of the companies. Just as the year ended, the I.C.C. authorized issuance by the St. Louis-San Francisco and the SAL of 90,000 and 40,000 shares, respectively, to implement similar stock option plans for officers and key employees.

A much broader plan, having the same general purposes, but covering all employees with at least five years of service, was put into effect by the Chesapeake & Ohio. Under it, 300,000 shares of the road's common stock have been made available for purchase by any qualified employee, in 10-share lots, through payroll deductions. This plan has met with enthusiastic reception by C&O employees, who had used it to buy a total of 20,530 shares up to December 1.

Dividend Payments Highest Since 1930

Total cash dividend disbursements during the year have been estimated at $350 million, the highest since 1930—unquestionably an important factor in the year's rise in railroad stock prices. Payments of $350 million, if realized, would compare with disbursements of $328 million in 1951; $312 million in 1950, and $252 million in 1949. While there was no single dividend payment comparable to the Nickel Plate's 1951 achievement in clearing up arrearages of $45 per share on its preferred stock, the number of dividend increases on individual stock issues again far outstripped the number of reductions.

Worthy of special notice were the Baltimore & Ohio's payment of 75 cents on its common stock, the Colorado & Southern's $2 disbursement on its 4 per cent first preferred, and declaration by the Missouri-Kansas-Texas of a $1.25 dividend, payable January 5, 1953, on its 7 per cent preferred A stock. Each of these payments was the first since 1931 on the issue involved. The Detroit & Mackinac declared, for early 1953 payment, a $2 dividend on its 5 per cent non-cumulative preferred—the first disbursement on the issue since 1921.

The C&EI, as heretofore noted, cleared up a small ar-

Railroads in Hands of Receivers or Trustees On December 31, 1952

Road	Mileage owned	Date of receivership or trusteeship	Total securities in hands of public	Principal amount of obligations in default as to principal and/or interest
Boston & Providence	64(a)	1938	$5,499,100	$2,170,000
Florida East Coast	566	1931(b)	97,478,646	45,000,000
Georgia & Florida	354	1929	22,713,906	8,253,919
Huntingdon & Broad Top Mt.	68	1949	5,796,129	2,424,629
Long Island	351	1949	9,958,550	6,500
Missouri Pacific	6,441	1933	539,554,396	332,654,000
M.P. R.R. Corp. in Neb.	...	1933	(included in M.P. R.R.)	
Boonville, St. L. & So.	0.18	1936	5,500	5,500
Cairo & Thebes	25	1937	None	None
Chester & Mt. Vernon	64	1937	None	None
Fort Smith Suburban	7	1937	None	None
Marion & Eastern	3	1937	None	None
Natchez & Southern	9	1937	None	None
New Orleans, Texas & Mex.	174	1933	41,475,700	None
Asherton & Gulf	32	1937	None	None
Asphalt Belt	18	1937	None	None
Beaumont, S.L. & Western	84	1933	None	None
Houston North Shore	27	1933	None	None
Houston & Brazos Valley	37	1937	None	None
New Iberia & Northern	61	1937	None	None
Iberia, St. Mary & East.	34	1937	None	None
Orange & Northwestern	62	1937	None	None
Rio Grande City	18	1937	None	None
San Antonio Southern	29	1937	None	None
San Antonio, Uvalde & Gulf	314	1933	None	None
San Benito & R. G. Valley	115	1937	None	None
Sugar Land	19	1937	None	None
St. L., Brownsville & Mex.	560	1933	7,225,724	None
Austin Dam & Suburban	2(c)	1937	None	None
International-Gt. Northern	1,032	1933	52,035,186	45,750,000
New Jersey & New York	28	1938	1,389,360	1,022,960
New York, Ont. & Western	340	1937	96,832,831	35,660,788
Ellenville & Kingston	67	1948	None	None
Ont., Carbondale & Scran.	38	1948	None	None
Port Jervis, M. & S.	28	1948	None	None
New York, Susq. & Western	120	1937	13,530,817	12,545,608
Port Angeles Western	50(d)	1952	(d)	None
Smoky Mountain	29	1947(e)	None	None
Tallulah Falls	57	1923	None	None
Waco, B., T. & Sabine	18	1930	1,443,000	None
Wisconsin Central	901(f)	1932(g)	55,652,901	35,771,000

(a) Operated by the New York, New Haven & Hartford.
(b) Changed to trusteeship 1941, and again to receivership 1952.
(c) Yard switching tracks.
(d) Operations discontinued October 1951. Majority of stock owned by Sol Duc Investment Co.
(e) Changed to receivership 1948.
(f) Operated by Soo Line.
(g) Changed to trusteeship 1944.

Note:—The effort has been made, in the above table, to list only those securities of bankrupt carriers which are actually in the hands of the investing public—and to exclude securities of one carrier held by an affiliated carrier. Where securities are held by other railways not affiliated with the issuing company, however, they are included in the above list as publicly held. Owing to the complexities of some corporate structures, the decision as to the fact of public or other-carrier ownership has preforce, in some instances, been arbitrary. The purpose has been to give a general picture of the public stake in bankrupt carriers rather than a comprehensive tabulation of legal obligations.

Summary of Railroad Receiverships and Trusteeships, 1920 to 1952

	Roads Placed in Receivership or Trusteeship		Roads Taken from Receivership or Trusteeship*			Roads Placed in Receivership or Trusteeship		Roads Taken from Receivership or Trusteeship*	
Year	No. of roads	Miles	No of roads	Miles	Year	No. of roads	Miles	No. of roads	Miles
1925...	6	11,368	6	638	1940...	..	...	6	3,675
1926...	6	88	12	12,852	1941...	1	25	9	5,031
1927...	6	924	5	142	1942...	4	961	7	2,230
1928...	1	19	4	209	1943...	3	23	6	394
1929...	3	634	5	562	1944...	1	...	8	13,096
1930...	4	4,752	2	1,048	1945...	1	96	5	10,833
1931...	19	5,195	2	102	1946...	..	...	7	4,832
1932...	13	11,817	8	394	1947...	2	396	14	11,535
1933...	18	21,222	2	298	1948...	4	29	11	9,473
1934...	1	81	2	04	1949...	2	445	3	970
1935...	16	29,018	5	436	1950...	..	...	2	407
1936...	4	8	3	122	1951...	..	...	..	...
1937...	23	1,937	2	179	1952...	1	61	3†	251
1938...	9	6,194	8	290					
1939...	3	733	4	401					

*Prior to 1938 these figures covered foreclosure sales only.
†Rio Grande Southern and Wyoming abandoned.
For years prior to 1920, see *Railway Age*, January 15, 1951, page 177.

rearage on its Class A stock; the Chicago Great Western reduced back dividends on its 5 per cent preferred to the point where they could conceivably be wiped out by one more good year; and the New Haven paid off $4 of a $15 accumulation on its 5 per cent preferred A, while keeping abreast of current payments. The Maine Central and the Western Maryland made slight progress in paying off accumulated dividends on their respective 5 per cent and 7 per cent preferred issues.

Refunding and Refinancing

In the bond field, activity during the year was confined almost entirely to refunding operations. Among such operations were the following:

Atlantic Coast Line—Sold at par to a group of institutional investors, $22,000,000 of general mortgage 20-year 4¼ per cent series B bonds, to retire a like amount of first consolidated mortgage bonds which came due on July 1. The ACL also issued for sale in 1952 and 1953 $20,000,000 of general mortgage 4¼ per cent series C bonds, due July 1, 1972, "to reimburse its treasury for expenditures made on roadway additions and betterments since January 1, 1950," and "provide added funds to accelerate its modernization and improvement program"; and was also authorized nominally to issue for treasury purposes $13,817,000 of series X general mortgage 3½ per cent bonds.

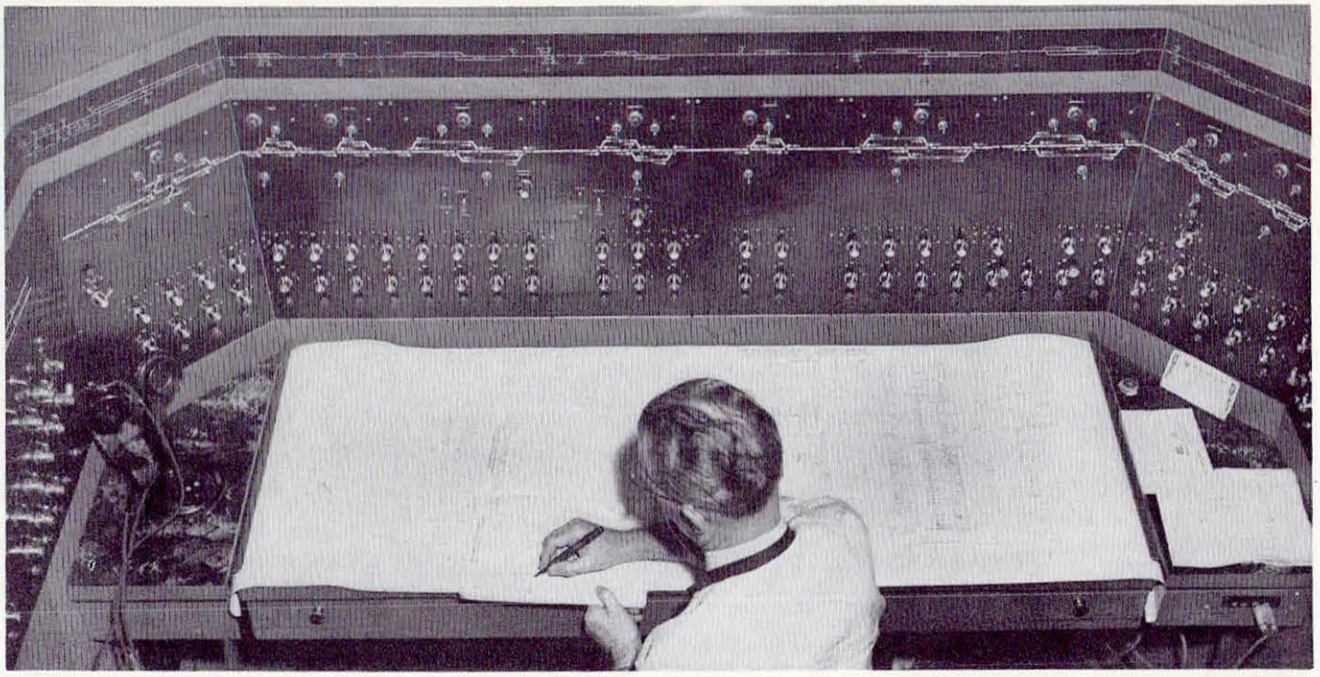
Chicago & Western Indiana—Issued $65,000,000 of first collateral trust 4⅜ per cent bonds, to mature May 1, 1982, and sold $64,239,000 of them at 100.1. Proceeds were used principally to refund $50,000,000 of outstanding consolidated mortgage bonds and $11,739,000 of first and refunding mortgage bonds which matured July 1 and September 1, respectively.

Illinois Central—Simplified its capital structure by selling, at 97.347, $62,000,000 of consolidated mortgage 30-year 3⅞ per cent series E bonds, and using the proceeds to retire a number of other outstanding issues. While the issues thus retired did not mature until 1963, the IC was able substantially to reduce its fixed charges by obtaining a lower interest rate on the new bonds than the old bonds carried. The IC also sold to seven insurance companies, without competitive bidding, $13,000,000 of consolidated mortgage 30-year 4¼ per cent series D bonds, using the proceeds to redeem outstanding portions of a number of other bond issues maturing in 1952 and 1953. Authority has been granted, and agreement has been reached, for the same insurance companies to buy, in 1954, another $12,000,000 of these series D bonds, to refund other IC bond issues maturing in 1955.

Maine Central—Sold $1,500,000 of first mortgage divisional lien 5 per cent bonds, due in 1977, to retire $1,570,000 of Portland & Ogdensburg first mortgage gold bonds matured November 1.

Seaboard Air Line—Sold $25,000,000 of 3⅞ per cent, 25-year sinking fund debentures to reimburse itself for funds used to redeem on August 29 a somewhat larger amount of series A 4½ per cent general mortgage income bonds.

Southern—Began action looking toward refunding of $89,643,000 of bonds maturing between July 1, 1953, and November 1, 1956. Application for relief from competitive bidding requirements on a proposed $46-million issue was turned down by the I.C.C., and no formal application for issuance of these bonds on any other basis had been made up to the year's end. As part of the general refunding program, however, the affiliated New Orleans & Northeastern, just at the end of the year, sold, jointly with the Southern, $15,000,000 of 3¾ per cent bonds, due November 1, 1977. Proceeds will be used by the Southern to purchase for retirement or payment before or at maturity some of its development and general mortgage gold bonds due April 1, 1956. Slightly earlier, the subsidiary New Orleans Terminal Company had sold $8 million of 3¾ per cent first mortgage bonds, also due November 1, 1977; proceeds of this



Nevertheless, they continued to make such fixed-facility improvements—stations, yards, line relocations, signaling and communication installations and the like—to the tune of more than one-third of a billion dollars in 1952.

issue, together with other funds, were to be used to redeem $11,423,000 of outstanding 4 per cent bonds, due July 1, 1953.

Refunding applications were pending at the year's end from the North Pennsylvania (Reading) for $6,000,000 and the Detroit & Toledo Shore Line for $3,000,000.

An interesting feature of the year's bond activity was the I.C.C.'s reversal of itself on the question of competitive bidding. After allowing such relief to the C&WI and the ACL (on its $22,000,000 refunding issue) and in one case to the IC, it denied it to the IC in another case and to the Southern; then allowed it again for the Maine Central.

The Santa Fe took the forward-looking step of creating a "bond retirement fund," to which appropriations will be made twice yearly, as conditions permit, with a view to meeting 1995 maturities of nearly $200,000,000 of non-callable bonds.

New capital for acquisition of locomotives and cars continued to be raised without undue difficulty through sale of equipment trust certificates, but the upward trend in interest rates on such certificates, noted in these pages a year ago, continued. The highest interest cost reported on a publicly sold issue in 1952 was just about the same as in 1951—3.46 per cent against 3.48 per cent; but the lowest reported cost jumped from 2.46 per cent in 1951 to 2.78 per cent in 1952. In 1951, moreover, 26 of 48 issues reported were sold at 3 per cent or less, and 22 at more than 3 per cent; in 1952, only 19 of 52 issues sold below 3 per cent, and 33 above that figure. Total volume of equipment trust certificate sales, at around $260 million, was closely comparable to the 1951 figure.

Capital Readjustments

The year produced considerable activity, but little actual accomplishment, looking toward capital readjustment. The one such plan actually carried to completion was that of the Colorado & Southern and its subsidiary Fort Worth & Denver. Directors of the Katy, however, promulgated such a plan for their company almost immediately after it reached, on October 1, its long-time goal of getting its adjustment mortgage bond interest on a current basis. The Boston & Maine apparently neared settlement of its Mahaffie Act capital modification plan, as objectors to the company's plan were reported to have reached an agreement with its management. The I.C.C. approved a revised plan of reorganization for the Wisconsin Central, and announced that it would take another look at the controversial Missouri Pacific reorganization plan.

Only one company emerged from receivership during the year—the Meridian & Bigbee River, reorganized as the Meridian & Bigbee. Two other companies, however, which were on the accompanying list of roads in receivership a year ago are missing from the list this year by reason of abandonment—the Rio Grande Southern and the Wyoming. One new company, the Port Angeles Western, has been added, while the Florida East Coast has reverted from trusteeship to receivership status.

There were no important changes of control during the year, though several large companies sought or obtained authority to dissolve as separate corporations some of their wholly owned subsidiaries. The Central of New Jersey received commission authority to reconsolidate with itself the Central of Pennsylvania, a court decision having eliminated the possibility of tax savings from separation of the two companies; and the New Haven made in court an offer to acquire the bankrupt New York, Ontario & Western.

A year-end presidential change on the Monon was accompanied by reports concerning a possible merger of the 868-mile Chicago & Eastern Illinois and the 541-mile Chicago, Indianapolis & Louisville—a merger which, if it is ever effected, would create a 1,409-mile system fanning out from Chicago southward to Indianapolis, Louisville, Evansville and St. Louis.

Railroad tariff complexity is a result of handling every kind of freight offered for carriage.

What Tariff Simplification in 1953?

Research Group expects to complete its program's first phase, the keystone of which is nationwide uniformity in the form and arrangement of tariffs—Will also get into regulatory requirements as they affect tariff making

By **CHARLES S. BAXTER**
Chairman, Railroads' Tariff Research Group

As our studies progressed through 1952 the problem of freight tariff complexity was found to possess three major facets. The first relates to the form, arrangement and statement of matter in tariffs. The second relates to regulatory requirements as they are revealed in substantive provisions of tariffs; and the third, to rate-making practices and the rate structures they have created.

Thus, we must steer our program through three distinct phases. In the first two phases we can treat with the problem in across-the-board fashion, but in the final phase selective processes will have to be pursued.

Lest these broad generalizations should be construed as over-simplifying the problem, let it be understood that we are well aware of many vexing subfacets to be dealt with under each phase.

The first facet is "mechanical." Its principal subfacets are (1) nationwide uniformity in tariff form and arrangement; (2) orderliness in the layout of matter and clarity of expression; (3) uniformity in language of tariff provisions having the same effect; (4) innovations to expedite the processes of developing tariff information with a higher degree of accuracy; and (5) modernization of tariff circulars promulgating the tariff-making specifications of federal and state regulatory bodies. The "roots" of these subfacets are many and they extend in diverse directions. They involve considerations and individual elements too numerous to list and discuss here. This is the first phase and the one to which we have devoted our time and energies during 1952.

During the year just ended we submitted to the joint committee of railroad and industrial traffic executives a total of 34 formal reports and recommendations. In each of these a remedy was proposed for a single element of tariff complexity. All of these proposals have been adopted and already a clearly defined pattern of the "tariff of tomorrow" is taking shape.

The keystone of Phase I is absolute nationwide uniformity in the form and arrangement of tariffs. The attainment of that objective is dependent upon strict conformity by all tariff makers with the specifications approved by the joint committee. Hence these specifications had to be promulgated as mandates. In recognition of this fact, early in 1952 the railroads of the United States conferred upon our Administrative Committee of

A WORD ABOUT OUR ASSETS

The joint committee which considers our proposals is composed of railroad and industrial executives who are dedicated to the goals we are pursuing. They go about their work with a selfless zeal which is truly inspiring. We are enjoying the ultimate in cooperation and day-to-day assistance from the Interstate Commerce Commission. Through a special committee representing the National Association of Railroad and Utilities Commissioners we receive splendid technical assistance and support from the state commissions. Tariff users everywhere are solidly behind us. Tariff makers eagerly extend their services to us and zealously live by the book of rules we are creating. The transportation press has been generous in its coverage of our activities. With these assets failure is an impossibility.

12 railroad traffic executives the authority to adopt tariff-making specifications, pertaining to form and arrangement, which would be binding upon all railroads. This one action assures, beyond peradventure, the success of Phase I, and out of this action was conceived the series of Freight Tariff Improvement Bulletins by which each adopted tariff-making directive is transmitted to tariff publishing agents and tariff issuing officers of individual railroads.

As 1952 ended a total of 32 Freight Tariff Improvement Bulletins had been issued and the specifications they enunciated are being reflected in new tariffs as they are issued.

Before an accounting is given of the accomplishments of our organization last year, certain developments of far-reaching importance to tariff simplification should be reviewed and evaluated.

The uniform classification and the new tariffs of class rates applying east of the Rocky mountains became effective on May 30, 1952. The major credit for the advances in the art of tariff making which these tariffs reflect properly belongs to a committee of tariff publishing agents directly responsible for their compilation. The twelve rate tariffs are uniform in form and arrangement; common provisions read the same in text and title and carry identical item numbers; they are significantly numbered for identification both as to character of rates they contain and to territorial application. They are milestones of estimable progress in the march toward tariff simplification.

Not only are these tariffs economical from the standpoint of the user. The 12 rate tariffs and one basis tariff consist collectively of 4,871 pages. The older systems of class rates, covering exactly the same geographical area, were published on 58,810 pages in 92 tariffs.

These new tariffs signal the beginning of the end for such provoking factors of tariff complexity as territorial differences in classification ratings, minimum rates to and from territorial gateways, bridge scales and the like which have, for years, contributed so heavily to the burden upon the tariff user. The old tariffs will be with us until the railroads work out a suitable disposition for each of the exceptions ratings to which these tariffs are still applicable, but the application of these tariffs is expected to diminish rapidly as the conversion process develops momentum. It will be a great day for the tariff user when the 92 old tariffs can be tossed into the waste basket and carted to the incinerator.

The simple style of these new tariffs can and should be used to state some of our more important commodity rate adjustments. Not only would the ascertainment of rates then become vastly simplified but also very considerable savings in tariff-making costs would be realized.

Much progress was made in 1952 by the railroads and publishing agents in picking up the general rate increases authorized in Ex Parte Nos. 162, 166 and 168. Interstate Commerce Commission authority to continue reference to "master" increase tariffs expires March 31, 1953, and the present indication is the program will be completed on schedule. The wake in "honor" of the demise of the "master" tariffs will be a joyous occasion.

In 1952 the tariff-making specifications we successfully advocated covered a wide range of subjects. Already some of these are being reflected in the new tariffs as they come off the press. Every one of these specifications is designed to make the freight tariff a more efficient instrument in the hands of the user. Some of them will increase tariff-making costs.

It has been directed that all rules and regulations in tariffs which affect the application of rates from the standpoint of routing shall be transferred from the rules sections to the routing sections of tariffs in order that all matter of like import will be found in a single location.

It has been directed that individual lines and rate committees set up processes to screen objectively for clarity all new narrative matter proposed to be added to tariffs, and for faithfulness to the freight classification of new proposals to add commodity descriptions. A lot of our troubles stem from loose, awkward language and from too much variety in commodity description.

Another specification requires the separate itemization of each lateral line of matter when rates or rate bases are set up in so-called "checkerboard" tables such as are class rates. This will prove to be an important time saver and error preventative. Actual time studies have demonstrated that the user can check supplements for changes in one-third of the time consumed when such matter is not itemized.

Tariffs bound so tightly that printed matter adjacent to the binding margin cannot be readily seen have been outlawed. Instead of stapling tariffs of over 300 pages, as has been standard practice, such tariffs must hereafter be bound by sewing or, alternatively, by so-called "telephone book" process, either of which permits a clear view of any page of the tariff.

The use of the term "section" for tariff subdivisions, and the designation "notes" and "parts" for portions of tariffs have been specifically limited so that they do not run riot in the tariffs. They will, henceforth, carry narrow connotations and be so placed that they will be readily found by the user.

"Curse" of Multiple Sections Lessened

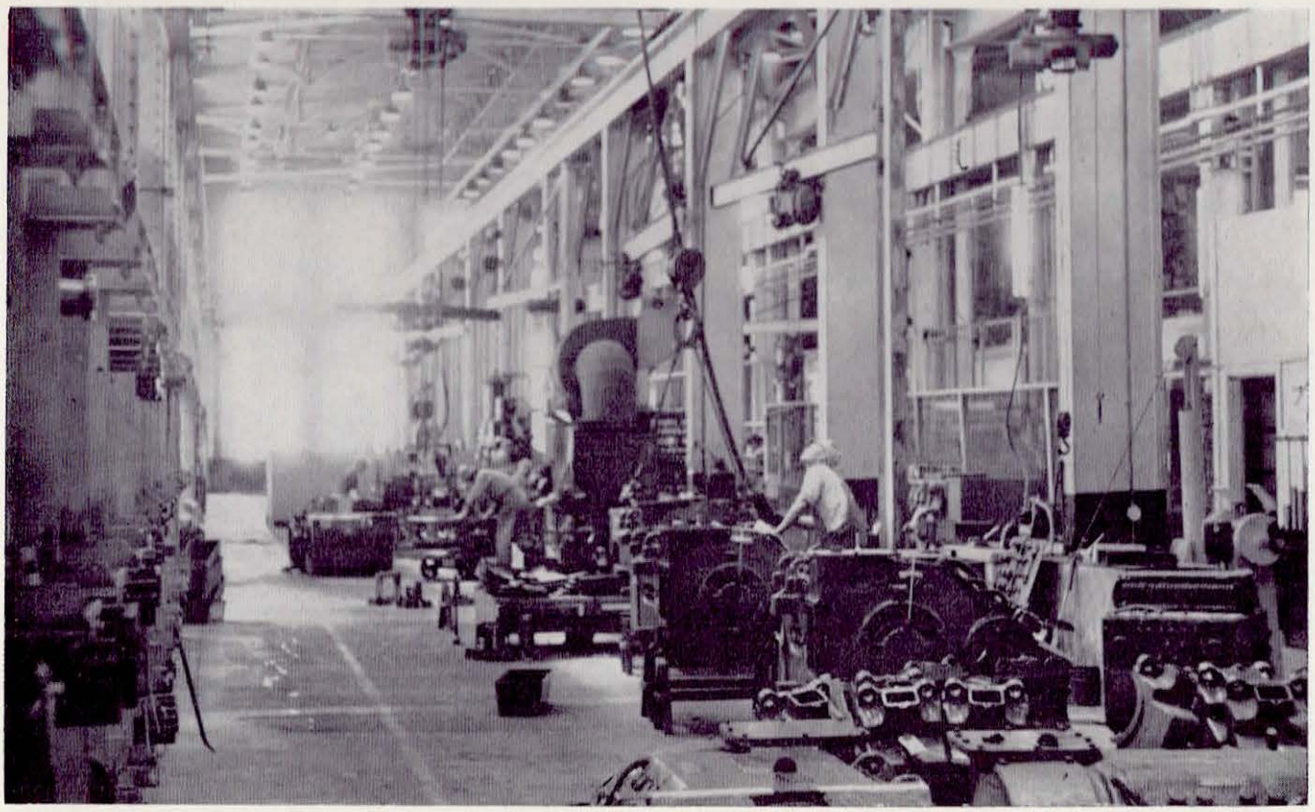
In another specification the curse of the multisection tariff has been lessened by requiring tariff makers to carry on the inside of the title page a clear, non-technical description of the arrangement of the tariff when the numbered sections exceed two.

A standard form has been adopted for the structural arrangement of items of narrative matter. A poll of tariff user preference, taken under one of our questionnaires, developed that the style of item number, subject and text in separate columns from left to right best suits the needs of the overwhelming majority of tariff users.

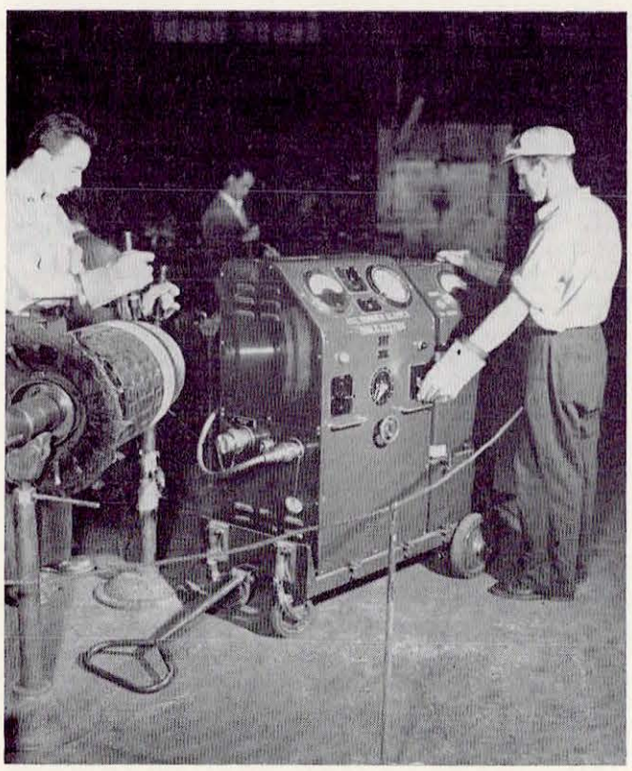
It has been decreed that every supplement of more than 8 pages shall contain a cumulative index of current items. Experience has demonstrated that there is no greater saver of the user's time than this index.

(Continued on page 199)

Shops and Shop Equipment—1952



A typical shop for making heavy electrical repairs employing production line maintenance methods.



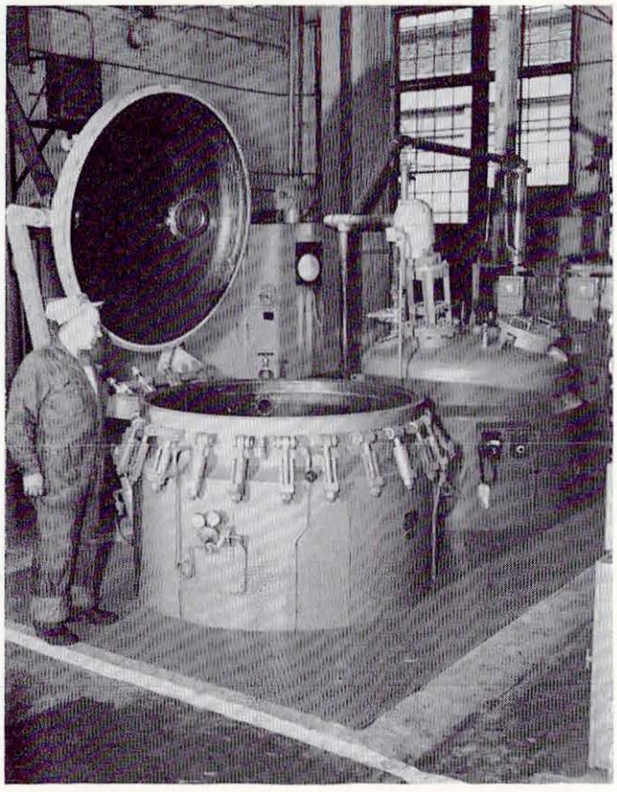
High-potential provides the acid test of insulation strength at the several stages of winding procedure.

In the period during which the railroads have been changing over from steam to diesel-electric power the problem of maintenance facilities has passed through several stages. Because they were faced with servicing and repairing a new type of power in increasingly large numbers of units before they were even thoroughly familiar with its operation, the railroads naturally looked to the builders of locomotives for advice as to the type of shop and terminal facilities that they might need. In the beginning both railroads and builders underestimated requirements for repair facilities and did not too accurately appraise the character of needed facilities.

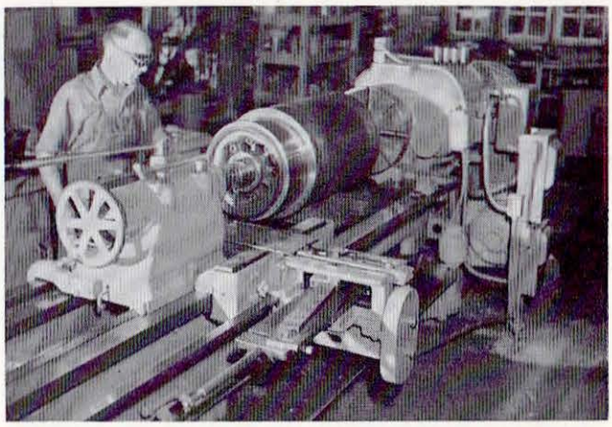
Now, after several years' experience, the shop problem is beginning to take shape and the roads have not only built and equipped many millions of dollars worth of shops and terminals but have reached a stage where they can begin to see the picture of future requirements more clearly.

From a mechanical standpoint the big job is that of repairing and servicing trucks, wheels and axles, brake equipment, journal bearings and diesel engine parts such as pistons, crank shafts and connecting rods. To do this has required a somewhat different type of shop equipment than was used for steam power. A major part of the locomotive repair job, where a road has acquired a sufficient number of units, is the inspection and repair of electrical equipment such as generators, traction motors and the many electrical devices used for auxiliaries and controls. Typical of the types of equipment used in today's shops are those such as are shown in the accompanying illustrations.

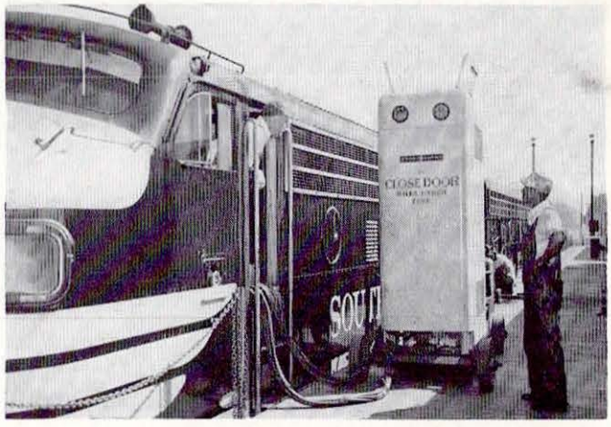
By H. C. WILCOX
Associate Editor



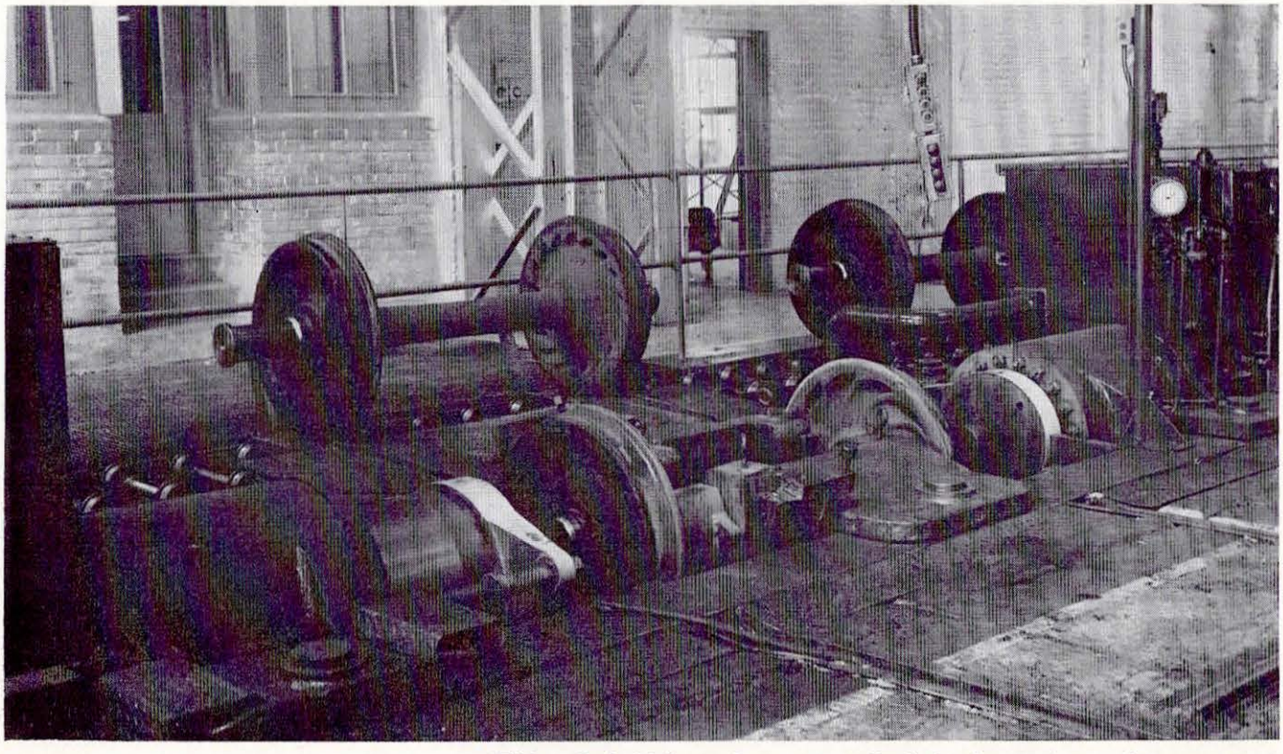
Impregnation is the generally accepted procedure for insuring penetration of varnish into armature coils.



A round commutator and a smooth one is a "must" for satisfactory motor performance and long brush life.

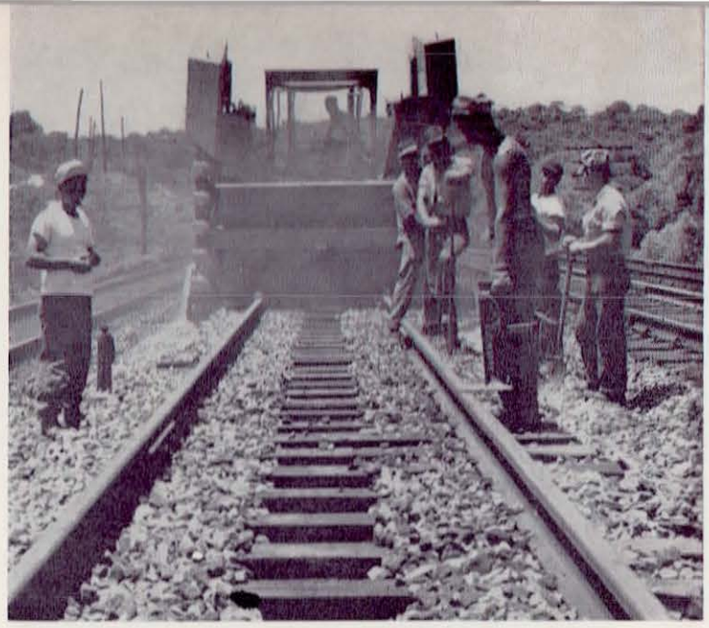


The easiest way to find out if an engine is performing as it should is to use a portable load rheostat.



With today's high-speed operation wheels for locomotives and cars are such an important factor that modern wheel shop tools are an absolute necessity.

A new machine marketed last year was this track-gaging device by which tie plates are accurately alined and holes bored for hold-down spikes in some of the ties.



More interest was shown in new ballasting equipment. This machine picks up newly unloaded ballast and distributes it across the track as desired.

Outlay for Maintenance Equipment at New High

Purchase of machines reflects trend toward use of larger, more expensive, units

By MERWIN H. DICK
Engineering Editor

Purchases of machines and equipment for use by the maintenance-of-way and -structures forces in 1952 were influenced by a combination of factors. It is worth while to analyze these factors and to evaluate them in terms of their effect on the purchases of such equipment. First, however, it must be recorded that the overall effect was a moderate reduction in the total number of units purchased last year but an increase in the total cost of these purchases to the railroads—in fact the amount of money spent for this purpose established a new high record.

Based on figures supplied to the *Railway Age* by nearly all of the railroads in the United States and Canada, it is estimated that these lines purchased in 1952 a total of 8,000 units of power equipment and tools of all types for use in the maintenance and construction of their tracks and structures. It is estimated that these purchases cost the railroads a total of $20,700,000. The accompanying table shows how these figures compare with those for previous years back to 1937, the first year for which figures are available.

The figures for 1952 are based on answers to a questionnaire sent to all railways in the United States and Canada. Replies were received from 78 per cent of the roads in these two countries, including all but a few of the larger roads. Of the railroads answering the questionnaire, 172 reported purchasing a total of 7,660 units of equipment. Of the Class I railroads reporting, 37 acquired more units of equipment than in 1951, 5 obtained the same amount, and 59 fewer.

One of the factors influencing work-equipment purchases in 1952 was the strike of steel workers which not only resulted in a substantial reduction in the tonnage of new rail made available for laying during the year but which also had a depressing effect on railroad revenues and hence on the amount of money available for equipment purchases. Nowhere was the effect of the strike more apparent than in the purchase of equipment used in laying rail. A total of 812 units of this type were reported purchased in 1952, which compares with reported purchases of 1,010 machines in 1951. Rather surprisingly, as low as these purchases were in 1952, they were still above the 713 units reported in 1950.

Somewhat the same pattern was shown in purchases of motor cars. After registering an increase from 1,229 units reported purchased in 1950 to 2,012 in 1951, the purchases in this category dropped to 1,354 in 1952. The primary underlying factor responsible for the decline in these purchases—a factor that has been in evidence for a number of years—is the continued trend

ANNUAL EXPENDITURES FOR MAINTENANCE OF WAY AND STRUCTURES WORK EQUIPMENT, 1937—1952

	Units	Expenditure
1937	3,310	$5,000,000
1938	1,376	2,000,000
1939	3,547	6,000,000
1940	5,414	7,250,000
1941	8,007	10,500,000
1942	7,612	10,270,000
1943	8,507	12,300,000
1944	9,984	14,400,000
1945	11,733	17,500,000
1946	9,939	15,400,000
1947	9,500	19,100,000
1948	9,300	18,700,000
1949	8,700	17,500,000
1950	8,700	18,270,000
1951	9,700	19,500,000
1952	8,000	20,700,000

toward the use of highway vehicles for hauling men and materials. In 1952 the reported purchases of this type of equipment included 249 automobiles, 1,081 trucks and 63 trailers, a total of 1,393 units. Comparable purchases in 1951 included 283 automobiles, 1,113 trucks and 30 trailers, a total of 1,426 units.

Purchases of equipment for carrying out ballasting and surfacing programs held steady last year. A total of 1,347 machines was reported purchased in this category in 1952, compared with 1,365 such units in 1951.

Prospects for 1953

The railroads plan to purchase more work equipment this year than in 1952. This statement is based on an analysis of figures submitted to *Railway Age* by 72 railroads, giving estimates in dollars of the amount of maintenance-of-way work equipment they plan to buy this year. Of these roads, 37 expect to spend more than in 1952, and 33 less. The contemplated purchases of all the 72 roads amount to $7,144,380, an increase of $712,548 compared with 1952.

The foregoing figures on work-equipment purchases for 1952, coupled with close observation of developments in general in this field, suggest some interesting conclusions. One of these, indicated by the substantial increase in the dollar value of the purchases in view of a decline in the number of units purchased, is that a noticeable trend is occurring toward the use of larger, more expensive machines. A corollary development is an apparent increase in the practice of renting these larger machines—a practice which makes it possible for the smaller roads to take advantage of the money-saving qualities of this expensive equipment at a fraction of the purchase price.

Development work in the maintenance equipment field went forward steadily last year, stimulated by the relentless pressure of rising costs. Particular activity was noted with respect to ballast working and cleaning machines. Several new machines of this type were introduced and others were improved. The roads continued to show great interest in the several power machines for making tie renewals recently placed on the market, and in the rail-laying field a new type gaging device made its appearance.

Whatever else may be said about mechanization of maintenance-of-way work, one thing is certain—it is not a static field. The use of machines in this field, especially in track maintenance, is highly specialized, presenting problems perhaps not encountered anywhere else or in any other industry. After machines have been devised for performing all of the major operations involved in track maintenance, there remains the requirement that these machines will be used with maximum efficiency and effectiveness. One difficulty is that no sooner is a satisfactory gang organization devised for using available machines, when a new or improved machine, promising even greater efficiency, is developed, presenting still another set of conditions for its best utilization.

Another factor tending still further to muddy the waters of modernization are the underlying changes constantly going on in the standard practices of track construction and maintenance, many of which call for the use of entirely different machines.

What Tariff Simplification in 1953?

(Continued from page 195)

The serious problem of excessive supplementation of tariffs has been met through a direction that all tariffs immediately be brought into conformity with certain prescribed supplemental limits. The specification goes farther and directs that those supplemental limits be strictly observed hereafter.

A precise determination of the intrastate application of tariffs which also publish rates between interstate points is usually a doubt-ridden process. It has been directed that every tariff shall carry an individual rule clearly setting forth its intrastate application.

The mysterious and sometimes misleading column of "FX numbers" in lists of participating carriers is headed for the limbo. The I.C.C. has agreed with the many critics of the time honored practice of showing this column in tariffs and a specification was released directing that it be dropped.

In the space to be vacated there will be shown an index to the items in the tariff applying to rules which abridge the participation of particular carriers. In the very nature of things these rules are often obscure and many's the time one of them has been overlooked to the sorrow, embarrassment and expense of the user. This is distinctly an innovation and we predict it will become extremely popular to tariff users.

In another specification it has been directed that the explanations of general reference marks and abbreviations be transferred to the very back of the tariff where they will be found without searching indexes and thumbing pages.

The partly amended item is almost certain to bring on a migraine headache for the user any day in the week. A year-end specification outlaws the partial amendment of rules items. The matter of partly amending rate items —a practice now limited to the Trans-Continental tariffs —is still receiving consideration. The partial amendment of items containing lists of stations or commodities has been specifically directed since amendments of that sort conserve the tariff user's time.

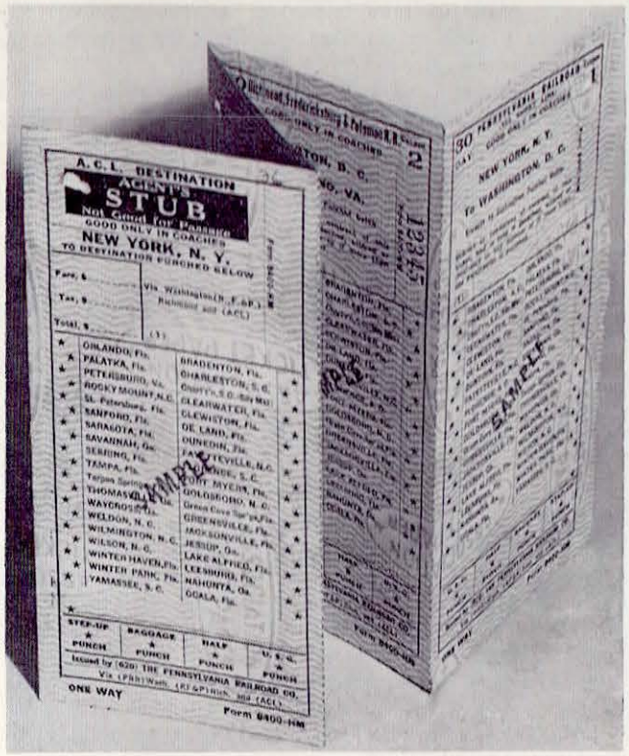
We will in all probability complete Phase I and make important progress in Phase II during 1953. One of the major Phase II studies is nearly completed and there may be important developments early next year even while we are engaged primarily in Phase I work.

Our Phase II activity will relate primarily to the tariff manifestations and implications of the administration of the fourth section of the Interstate Commerce Act. From this stems the most perplexing factors of tariff complexity. Circuity limitations, much elaborate routing and routing restrictions, application of intermediate point and "holding-out" rules, the alternative application of combination rates—all are related to the fourth section and its administration. The answer to the problem lies somewhere between a new concept of existing statutory requirements and legislative treatment of the section.

Since the necessary relief must come from governmental sources we will not, for obvious reasons, hazard any predictions as to accomplishments in 1953.

In Phase III we will operate primarily as fact-finders. We are not a rate-making organization and must confine our activities to the making of studies to develop ways to simplify tariffs by straightening out "kinks" and smoothing irregularities in rate structures, and point out such opportunities to appropriate authorities.

Railroads Broaden Attack on Paperwork Costs



The Pennsylvania, New York Central and the Milwaukee are among roads using the fan-fold type ticket.

Universal station code, "direct route" plan for short routing of non-direct connection empty box cars among ways to reduce or simplify paperwork

By J. W. MILLIKEN
Associate Editor

During 1952 the railroads continued their broad attack on the problem of reducing or simplifying paperwork. In this they have been assisted by the manufacturers of office supplies and equipment of all types. Working with a committee of the National Industrial Traffic League, the Railroad Tariff Research Committee is continuing its work of simplifying freight tariffs. Similarly, a committee composed of railroad accounting and passenger traffic men is hard at work attempting to simplify passenger tariffs and division sheets. Car accounting, ticketing, waybilling, and interline freight and passenger settlements are just a few of the items which received considerable attention during the past year and bid fair to continue in the spotlight during 1953 as well.

The use of punch card equipment continued to grow during 1952, both in Canada and the United States. Several installations of punch card equipment for the handling of car records or car accounting went into effect and they are in various stages of completion on the Union Pacific, Southern Pacific, Pennsylvania, Southern and Chesapeake & Ohio. In 1953 the St. Louis-San Francisco expects to mechanize the handling of car accounting and car records, while the Canadian Pacific and others will continue to expand the use of punch cards and Teletype.

Ticketing, too, will continue to receive study. The New York Central, for example, in September received delivery of two Burroughs "Ticketeers," and has placed them in Grand Central Terminal in New York. That road also has gone in for the fanfold type ticket. The NYC expects to use 32 forms of this ticket (i.e., with origins and destinations or junctions different on the 32 forms) with which it will replace some 484 forms now in use. The New Haven expects through the use of the Ticketeer to mechanize completely the selling of tickets at Grand Central.

Punch card equipment, in 1953, will be used increasingly in dividing interline freight revenues. The Illinois Central, which has, perhaps, gone farthest in the use of punched card equipment for prorating interline revenues, feels that it will be at least two years before "practically all" traffic movements will be handled on a fully mechanical basis. Furthermore, more roads will be exchanging punch cards for the purpose of checking the correctness of the divisions made by the settling road. This considerably speeds the checking process by originating and intermediate roads.

Systems and Procedures Group

During 1952 there were several important happenings which could bear fruit in helping the railroads reduce paperwork (and other) costs in 1953. First was the completion of a "tentative" Universal Station Code. Second: general—although as yet not official—acceptance of the Association of American Railroads' (Car Service Division) "direct route" plan for so-called Rule 3 (non-direct connection) box cars. Third: the formation of the Railway Systems and Procedures Association.

The Railway Systems and Procedures Association is composed of men from all departments of the railroads who are interested in improved methods of accomplishing the many varieties of work performed by their—and other—departments. To date, most—but not all—

Teletype is being used more extensively each year for sending advance consists of freight trains, in waybilling of l.c.l. and express between heavy-volume shipping and receiving cities, etc.

of the attention of the group has been given to improved methods of performing paperwork. One of the main purposes of this organization is to help railroad management obtain better controls, i.e., better tools for making decisions, and thereby to assist management in realizing maximum effectiveness. Also, the organization believes that attacking most problems from an interdepartmental angle rather than from a one-department basis will lead to better solutions more quickly. Since most of the organization's goals are long-range it is certain that most of any "pay-off" from its efforts will come after 1953. Although this group was formed only in May 1952, already it has 56 members from 24 railroads of the U.S. and Canada.

The direct route plan provides that all roads normally will have automatic outlets for non-direct connection foreign box cars. This will substantially reduce the amount of paperwork involved in getting these cars home to the owning roads. The plan also is expected materially to aid in reducing the amount of time such cars are on a hold track somewhere while awaiting short —or home—route instructions. Whether or not the plan will be given a trial during 1953 is not yet certain.

The Universal Station Code was devised primarily by accounting officers of the railroads in an effort to simplify the statistical and interline proration work. Under the Universal Station Code, each station is given a five-digit code number and each junction a four-digit number. Thus, except for junction stations, which have the same number on each railroad serving them, there are no duplicate numbers in the code. Proponents of the plan state that it will materially aid in car record and accounting work, waybilling, and tariff publication. In August 1952 the accountants turned the proposed code over to the operating and traffic officers for study.

Not everybody concerned, especially some of the tariff publishers, are thoroughly happy about the plan, at least in its present form. It is likely that if the plan is to be adopted at all the date of acceptance will be many months—and several revisions—from now. Almost everyone agrees that with a few changes the plan would work out admirably for the accounting departments. However, if the accountants are to use the plan successfully they must have the cooperation of the other departments. It is not at all certain that the operating and traffic departments can give the accountants what they want. The year ahead will be very interesting as this plan receives wider consideration.

More Photographic Equipment

In 1953 there should be also an expanded use of photographic type processes for handling various types of railroad paperwork, such as statements of differences and correction accounts, freight claim distribution sheets, etc. This method of handling involves the use of such duplicating equipment as the Ozalid and Bruning machines, along with translucent paper. As this practice becomes more common actual savings will begin accruing to all carriers using these processes.

Also on the agenda for 1953 is more consideration for making "legal" use of the shipping order copy of the bill of lading as the waybill for interline l.c.l. shipments. For strictly on-line shipments many roads have been following this practice for a number of years. Proponents of the proposal say that if the plan can be worked on a local basis there's no reason why it won't work on interline l.c.l. If the plan should be adopted it would reduce substantially the amount of paperwork involved in billing l.c.l.

CENTRALIZED TRAFFIC CONTROL INSTALLED IN 1952

Railroad and Location	Miles of Road	No. of Power Operated Switches	No. of Signals Controlled by Levers	No. of Intermediate Automatic Signals	Manufacturer
AT&SF					
Pueblo, Colo.	0.1s	4	8	..	Union
Trinidad, Colo.—Lynn, N.M.	0.8s 17.8d	26	44	16	Union
Bakersfield, Cal.—Calwa	107.5s	45	129	92	Union
ACL					
Florence, S.C.—S. Florence	2.7d	4	7	..	Union
Santee Bluff, S.C.—Etta	3.3s	3	7	2	Union
Cordele, Ga.—Fitzgerald	37.0s	8	26	10	Union
Manchester, Ga.—Haralson	28.8s	8	24	8	Union
B&O					
Bridgeport, W.Va.—Clarksburg	3.3d	9	11	..	G.R.S.
CNR					
GTW					
W. Pontiac, Mich.—Durand	36.2s	9	28	20	Union
C&O					
Westham, Va.—Bremo	54.8s 4.0d	15	48	2	Union
Balcony Falls, Va.—Holcomb Rock	16.0s	9	23	..	Union
Scott, W.Va.—Barboursville	16.5d	14	16	4	Union
Newkirk, Ohio—Fowlerton, Ind.	91.0s	24	86	46	Union
Griffith, Ind.	1.8s	6	9	..	Union
PM District					
Plymouth, Mich.—Romulus	11.8s	1	3	4	G.R.S.
CB&Q					
Brookfield, Mo.—Maxwell	74.5s	19	62	24	Union
Clinchfield					
Erwin, Tenn.—Spartanburg, S.C.	140.0s	20	46	60	Union
D&H					
W. Waterford, N.Y.—Ballston Spa	12.5s 6.0d	47	49	10	G.R.S.
DSS&A					
Negaunee, Mich.	2.8s	7	22	4	G.R.S.
Erie					
Randolph, N.Y.—Waterboro	5.9s	..	3	2	Union
IC					
Lake Cormorant, Miss.	1.5s	1	6	1	Union
L&N					
Calera, Ala.—Montgomery	62.0s	13	44	28	G.R.S.
MeC					
Waterville, Me.—Waterville East	1.6d	10	9	2	
PT					
Rigby, Me.	1.3d	6	5	2	
MP					
Raddle, Ill.—Gale	4.3s 34.0d	26	60	54	G.R.S.
NYC&StL					
Argos, Ind.—Knox	21.0s	3	8	2	Union
N&W					
Disputanta, Va.—Po	8.8d	4	4	12	Union
Lynchburg, Va.—Forest	8.5s	..	..	13	Union
Forest, Va.	3.6d	12	12	..	Union
Waynesboro, Va.—Stuarts Draft	10.1s	2	12	4	Union
Powhatan, W.Va.—Big Four	19.6d	13	23	14	Union
PRR					
Truxall, Pa.—Apollo	3.5d	5	5	..	Union
StL-SF					
Hammond, Kan.—Paola	50.0s	10	30	33	Union
StLSW					
Pine Bluff, Ark.—Brinkley	67.7s	13	58	28	Union
SAL					
Atlanta, Ga.	4.5s 1.6d	1	39	8	Union
Birmingham, Ala.	1.9s	1	11	..	Union
Moncure, N.C.—Aberdeen	33.6s 10.2d	18	39	19	Union
Coleman, Fla.—W. Palm Beach	....	27*	30*	..	Union
Hialeah, Fla.	....	7	10	3	Union
Soo Line					
Duplainville, Wis.	0.6s	..	4	..	G.R.S.
SOU					
AGS					
Akron, Ala.—Meridian, Miss.	70.0s	9	37	49	G.R.S.
CNO&TP					
Boyce, Tenn.—Daisy	12.5s	4	14	11	G.R.S.
TH&B					
M.P. 39.26-M.P. 37.16	2.1d	30	32	..	G.R.S.
UP					
Menoken, Kan.—Rudy, Neb.	144.0s	31	124	104	Union
Rieth, Ore.—Hinkle	28.0s	10	28	18	Union
Wabash					
Camden, Mo.—Birmingham Jct.	22.8s	7	25	12	Union
Decatur, Ill.	2.7s	..	7	..	Union
WM					
Plainfield, Pa.—Reid, Md	10.0s 11.1d	7	20	21	Union
WP					
Alazon, Nev.—Salt Lake City, Utah	213.6s	42	165	110	Union
Totals	1,394.1s 147.7d	597	1,512	852	
Miles of Road	1,541.8				
Miles of Track	1,689.5				

* Added to existing CTC.

NEW INTERLOCKINGS INSTALLED IN 1952

Railroad and Location	No. of Home Signals	No. of Switches	Manufacturer
AT&SF			
Saginaw, Tex.	3	1	Union
ACL			
Lanes, S.C.	3	1	Union
B&O			
Baltimore, Md., (Bay View)	..	4	G.R.S
Baltimore, Md., (Mt. Royal)	5	12	G.R.S.
Brook, Pa.	4	5	G.R.S
B&M			
Clematis Brook, Mass.	5	3	G.R.S
CNR			
Mimico, Ont., (West End)	15	19	G.R.S.
Mimico, Ont., (East End)	14	18	G.R.S.
Montreal, Que.	12	19	Union
Mount Royal, Que.	6	2	.....
Portage la Prairie, Man.	17	15	G.R.S.
CPR			
Medonte, Ont.	13	6	G.R.S.
East Coulee Bridge, Alta.	2	..	
CofNJ			
Allentown, Pa.	33	36	Union
Wilkes-Barre, Pa.	16	12	Union
C&O			
PM District			
Plymouth, Mich.	31	13	G.R.S.
C&EI			
Evansville, Ind.	3	..	
CB&Q			
Sumner, Mo.	6	1	Union
CRI&P			
Davenport, Iowa	6	3	Union
DM&IR			
Duluth, Minn.	32	13	G.R.S.
GN			
Bennett Mine Spur, Minn.	4	1	G.R.S.
Cut Bank, Mont.	4	2	G.R.S
LV			
Sugar Notch, Pa.	3	1	G.R.S.
Hazelton, Pa.	5	2	
South Wilkes-Barre, Pa.	3	1	G.R.S.
Sugar Notch, Pa.	4	..	Union
L&N			
Strawberry, Ky.	5	3	Union
New Orleans, La.	8	4	Union
MTA			
Boston, Mass.	16	26	Union
NYC			
Belle Isle, N.Y.	5	3	G.R.S.
Lyons, N.Y. (SS 15)	28	26	G.R.S.
Lyons, N.Y. (West Shore)	3	1	G.R.S.
Lyons Jct., N.Y.	3	1	G.R.S
Thompson, N.Y.	4	3	G.R.S
Rochester, N.Y.	12	11	G.R.S
Buffalo, N.Y.	6	6	G.R.S
Corning, N.Y.	4	..	G.R.S.
North Port Byron, N.Y.	6	8	G.R.S.
Thornhill, Ohio	8	6	G.R.S.
CCC&StL			
Middletown, Ohio	6	4	G.R.S.
P&LE			
West Pittsburgh, Pa.	1	1	Union
NYC&StL			
Fort Wayne, Ind.	9	1	Union
Conneaut, Ohio	6	3	Union
NYNH&H			
Canton Jct., Mass.	11	7	Union
PRR			
Truxall, Pa.	11	8	Union
Reading			
Phoenixville Tunnel, Pa.	4	..	G.R.S.
RF&P			
Alexandria, Va.	5	2	Union
North Acca, Va.	12	14	Union
SAL			
Birmingham, Ala.	4	..	Union
Soo Line			
Glenwood, Minn.	6	4	G.R.S
SOU			
Irondale Jct., Ala.	5	5	G.R.S.
Leeds, Ala.	8	2	G.R.S.
AGS			
Watts Jct., Ala.	3	1	G.R.S
Pape Jct., Ala.	3	1	G.R.S
Union			
Bessemer, Pa.	2	3	Union
UP			
Green River, Wyo.	11	8	Union
Hinkle, Ore.	3	3	Union
Wabash			
Forrest, Ill.	6	4	Union
Decatur, Ill.	7	5	Union
Totals	480	364	

Teletype is being used more extensively each year for sending advance consists of freight trains, in waybilling of l.c.l. and express between heavy-volume shipping and receiving cities, etc.

of the attention of the group has been given to improved methods of performing paperwork. One of the main purposes of this organization is to help railroad management obtain better controls, i.e., better tools for making decisions, and thereby to assist management in realizing maximum effectiveness. Also, the organization believes that attacking most problems from an interdepartmental angle rather than from a one-department basis will lead to better solutions more quickly. Since most of the organization's goals are long-range it is certain that most of any "pay-off" from its efforts will come after 1953. Although this group was formed only in May 1952, already it has 56 members from 24 railroads of the U.S. and Canada.

The direct route plan provides that all roads normally will have automatic outlets for non-direct connection foreign box cars. This will substantially reduce the amount of paperwork involved in getting these cars home to the owning roads. The plan also is expected materially to aid in reducing the amount of time such cars are on a hold track somewhere while awaiting short —or home—route instructions. Whether or not the plan will be given a trial during 1953 is not yet certain.

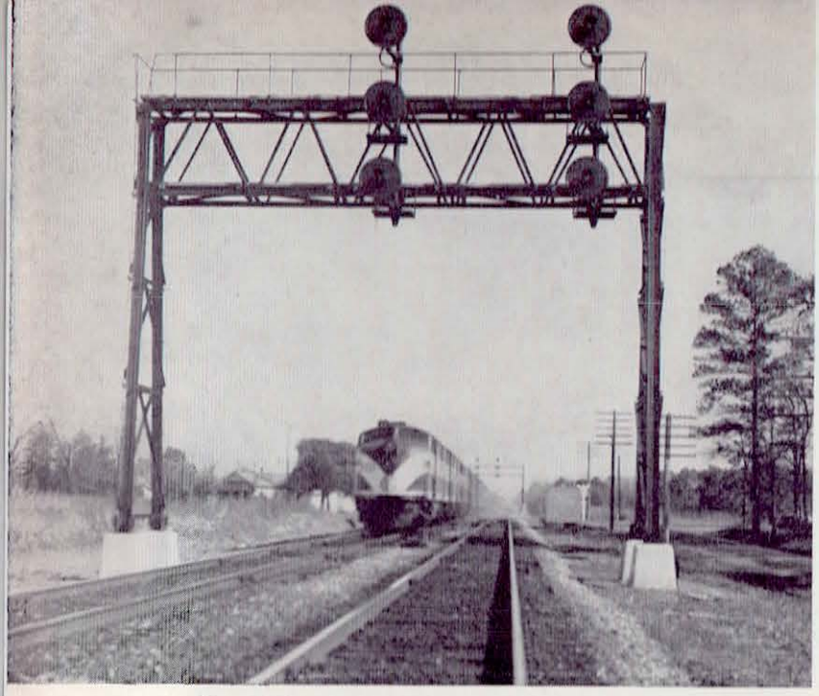
The Universal Station Code was devised primarily by accounting officers of the railroads in an effort to simplify the statistical and interline proration work. Under the Universal Station Code, each station is given a five-digit code number and each junction a four-digit number. Thus, except for junction stations, which have the same number on each railroad serving them, there are no duplicate numbers in the code. Proponents of the plan state that it will materially aid in car record and accounting work, waybilling, and tariff publication. In August 1952 the accountants turned the proposed code over to the operating and traffic officers for study.

Not everybody concerned, especially some of the tariff publishers, are thoroughly happy about the plan, at least in its present form. It is likely that if the plan is to be adopted at all the date of acceptance will be many months—and several revisions—from now. Almost everyone agrees that with a few changes the plan would work out admirably for the accounting departments. However, if the accountants are to use the plan successfully they must have the cooperation of the other departments. It is not at all certain that the operating and traffic departments can give the accountants what they want. The year ahead will be very interesting as this plan receives wider consideration.

More Photographic Equipment

In 1953 there should be also an expanded use of photographic type processes for handling various types of railroad paperwork, such as statements of differences and correction accounts, freight claim distribution sheets, etc. This method of handling involves the use of such duplicating equipment as the Ozalid and Bruning machines, along with translucent paper. As this practice becomes more common actual savings will begin accruing to all carriers using these processes.

Also on the agenda for 1953 is more consideration for making "legal" use of the shipping order copy of the bill of lading as the waybill for interline l.c.l. shipments. For strictly on-line shipments many roads have been following this practice for a number of years. Proponents of the proposal say that if the plan can be worked on a local basis there's no reason why it won't work on interline l.c.l. If the plan should be adopted it would reduce substantially the amount of paperwork involved in billing l.c.l.



The ACL increased the capacity of a section of double track with C.T.C. for both directions on both tracks.

This new interlocking machine on the Southern at Cincinnati consolidates the control of four layouts.

SIGNAL CONSTRUCTION . . .

1952—Good Progress
1953—Good Prospects

New installations of six conventional systems of signaling were up 23 per cent in addition to an abnormal volume of train stop, train control and cab signaling

By JOHN H. DUNN
Signal and Communications Editor

About 23 per cent more new signaling was placed in service on the railroads in the United States and Canada in 1952 than in the year previous. Automatic block was up 31 units; retarders and switches in yards, 319; centralized traffic control, 804; interlocking, 105; and highway crossing protection, 29. Of these systems of signaling, a total of 8,144 units were installed, which is 1,560 more than for 1951. This 8,144 is 28 units less than the annual average for the previous ten years, which included peaks of 9,970 in 1946, and 9,708 in 1945.

This, however, is not all of the good news. During the last two years, several railroads have been working on extensive installations of cab signaling, train stop, and train control. Some of these projects were finished in 1951, but the bulk were completed and reported placed in service in 1952, making a total of 2,355 such units, which, added to the other signal units, makes a grand total of 10,499 units, for 1952, as compared with the previous peak of 9,970 for 1946.

The continued high volume of signal construction in 1952, and good prospects for 1953, are due to several changing circumstances in railroading, as a result of which signaling projects not only save train time but make savings in operating expenses that pay for the improvement within relatively few years.

On most roads, the speed of moving freight trains has been increased to about the practicable maximum, so that no further appreciable reductions can be made in the time-in-motion between terminals. The same cannot be said about time lost by unnecessary train stops and delays en route, but reductions in this area are being made successfully on many roads by installing centralized traffic control. On a busy single track line this will save an average of approximately one minute a mile for each freight train. This saving of an hour to two hours on a subdivision results in better overall service to shippers. Also, the ability to "turn" a diesel locomotive an average of even one hour sooner has been the means of reducing total power requirements.

A further reason for installing C.T.C. is the difficulty of employing competent "telegraph" operators to continue authorizing train movements by timetable and train orders. Some roads have been forced to close some offices simply because no operators would work at these outlying stations. The savings in wages for operators three tricks every day, at a few outlying offices, offsets a considerable part of the cost of new signaling.

These are some of the reasons why centralized traffic control was installed in 1952 on 1,394 miles of single

COMPARISON OF ANNUAL SIGNAL CONSTRUCTION

	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942
Automatic block signals	1,318	1,189	1,133	1,974	1,711	2,269	3,078	2,350	1,539	1,690	1,421
Interlockings											
Signals and switches											
At new plants	864	879	1,150	863	1,074	857	1,529	910	851	1,498	785
At rebuilt plants	508	405	633	864	665	408	993	940	687	760	554
At automatic plants	133	116	106	132	80	83	132	88	62	55	78
Spring switches											
Spring buffer mechanisms	177	163	272	242	264	356	554	764	382	448	284
Mechanical facing-point locks	70	58	110	73	107	107	248	341	115	88	126
Signals at spring switches	317	280	578	455	516	491	707	991	553	498	384
Centralized traffic control											
Power switch machines	597	396	430	496	565	538	453	633	596	463	263
Semi-automatic signals	1,512	1,153	1,309	1,428	1,725	1,810	1,385	2,217	2,141	1,775	1,030
Intermediate signals in C.T.C. territory	852	587	674	590	738	853	....	....	....	....	....
Classification yards											
Car retarders	57	10	68	110	100	23	18	14	25	....	51
Power switch machines	304	32	172	245	192	27	73	57	52	....	108
Highway crossing protection											
Number of crossings at which new installations were made in year	1,435	1,406	1,573	1,571	1,432	1,088	800	403	268	206	541
Totals	8,144	6,584	8,208	9,043	9,169	8,910	9,970	9,708	7,029	7,481	5,625
Cab signaling, train stop, train control											
Miles of track	1,409	391									
Number locomotives or self-propelled cars	946	29									
Totals	2,355	410									

track and 148 miles of double track, including 597 power switch machines and 1,512 lever-controlled signals. On many of the projects the savings were so obvious that complete C.T.C. was readily justified. Other more or less borderline proposals, perhaps many, have been pigeonholed, because of the cost compared with automatic block.

The Louisville & Nashville has a standard practice of installing a complete C.T.C. system on single track. On this road as on others, the cost of C.T.C. is governed, to a large extent, by the number of power switches, with attendant signals and controls. Extensive experience guides the L&N in a thorough job of eliminating sidings not needed with C.T.C., as described in the December 29, 1952, *Railway Age*.

On medium traffic lines, the Atlantic Coast Line cuts the costs of C.T.C., in accordance with requirements, by using reversible coded track circuits and siding-to-siding blocks, as explained in our November 24, 1952, issue. On lighter traffic lines, where past practice might have called for only ordinary automatic block, and where funds were limited, the Burlington and the Canadian National, on entire engine districts, have cut the costs of C.T.C. by installing a power switch at one end of each siding and a spring switch at the other.

In nearly all recent single-track signaling, the important objective of dispensing with the antiquated timetable and train-order operation was accomplished by installing C.T.C., rather than conventional automatic block. An exception of importance, in 1952, was automatic block installed on 212 miles of single track on the Burlington-Rock Island between Houston, Tex., and Waxahachie (near Dallas). This line handles comparatively few trains but they are operated at high average speeds. Automatic block was needed primarily as protection. Elsewhere both the Rock Island and the Burling-

AUTOMATIC BLOCK SIGNALS INSTALLED IN 1952

Railroad and Location	Miles of Road	No. of Signals	Manufacturer
AT&SF			
Merrick, Kan.—Ellinor	10.1s	6	Union
ACL			
South Florence, S.C.—Santee Bluff	48.7d	54	Union
Etta, S.C.—Moncks Corner	16.8d	21	Union
B&M			
Clematis Brook, Mass.—Waltham North	1.2s	1	G.R.S.
East Sudbury, Mass.—Sudbury, Mass.	3.4s	2	G.R.S.
Carltonville, Mass.	0.7d*	1	G.R.S.
Worcester, Mass.	0.7d	4	G.R.S.
North Woburn, Mass.	...	1	Union
CNR			
Tide Head, N.B.—Matapedia, Que.	8.1s	10	G.R.S.
Mimico, Ont.	3.4s	7	G.R.S.
	2.0d		
Transcona, Man.—Beach Jct.	4.4d	18	
CPR			
Bolton, Ont.—Medonte	70.0s	103	Union
Barton, Vt.—West Burke	12.0s	20	G.R.S
Salmon Arm. B,C.—Kamloops	40.2s	86	G.R.S.
	24.2d		
CRI&P			
Houston, Tex.—Waxahachie	212.0s	178	Union
C&S			
FW&D			
Henrietta, Tex.—Wichita Falls	17.0s	13	Union
DL&W			
Pt. Morris Jct., N.J.—Slateford Jct., Pa	27.0d	30	Union
Elmira Heights, N.Y.—Painted Post	17.6d	18	Union
Erie			
East Corning, N.Y.—Erwins	10.4d	10	Union
IC			
Edgewood, Ill.—Greendale	18.6s	22	Union
Bluford, Ill.—Rust	19.6s	27	Union
Chiles, Ky.—Fulton	41.3s	54	Union
KCS			
McElhany, Mo.—Watts, Okla.	59.0s	75	G.R.S.
L&HR			
Sugar Loaf, N.Y.—Girarde	10.0s	12	G.R.S.
MeC			
Danforth, Me.—Tomah	13.4s	33	G.R.S.
Hermon Pond, Me.	...	1	G.R.S.
PT			
Thompsons Point, Me.—Portland	0.8s	1	G.R.S.
MTA			
Boston, Mass.	2.8d	46	Union
M-K-T			
Steedman, Mo.—North Jefferson	21.0s	28	Union
Cat Spring, Tex.—Sealy	15.0s	16	Union
NYC			
Belle Isle, N.Y.—Jordan (West Shore)	11.5s	10	G.R.S.
Lyons, N.Y.—Cuddeback	6.8d	15	G.R.S.
Belle Isle, N.Y.—Lyons	38.0d†	24	G.R.S
Jordan, N.Y.—Wayneport (West Shore)	48.9s	21	G.R.S.
B&A			
Riverside, Mass.—Framingham	9.6d†	24	G.R.S.
P&LE			
Youngstown, Ohio	2.4d	5	Union
Sheppler, Pa.—Rostraver	3.8d	6	Union
NYC&StL			
Silver Creek, N.Y.—Plate	8.0s	2	Union
NYNH&H			
Berea, N. Y.—Poughkeepsie	23.1d	26	G.R.S.
NP			
Billings, Mont.	1.0d	2	G.R.S.
Reading			
Belle Mead, N.J.—Weston-Manville	6.0d	1	Union
Tamaqua Tunnel, Pa.—Mahanoy Tunnel	5.7d	7	Union
Glenlake, Pa.—Morrisville	6.0s	2	G.R.S.
SOU			
Milltown, Ind.—Huntingburg	39.6s	55	G.R.S.
SP			
Polvo, Ariz.—Vail	15.3d	18	Union
Lookout, Ore.—Jasper	23.2s	54	Union
SP&S			
Wishram, Wash.—Moody, Ore.	5.0s	7	G.R.S.
WP			
Weso, Nev.—Elko	129.0s*	69	Union
Totals	718.3s	1,318	
	218.7d		
	129.7d*		
	47.6d†		
Miles of Road	1,114.3		
Miles of Track	1,332.9		

* Single-direction signaling on one of two main tracks.
† Fourth track removed and third track signaled for reverse movements.

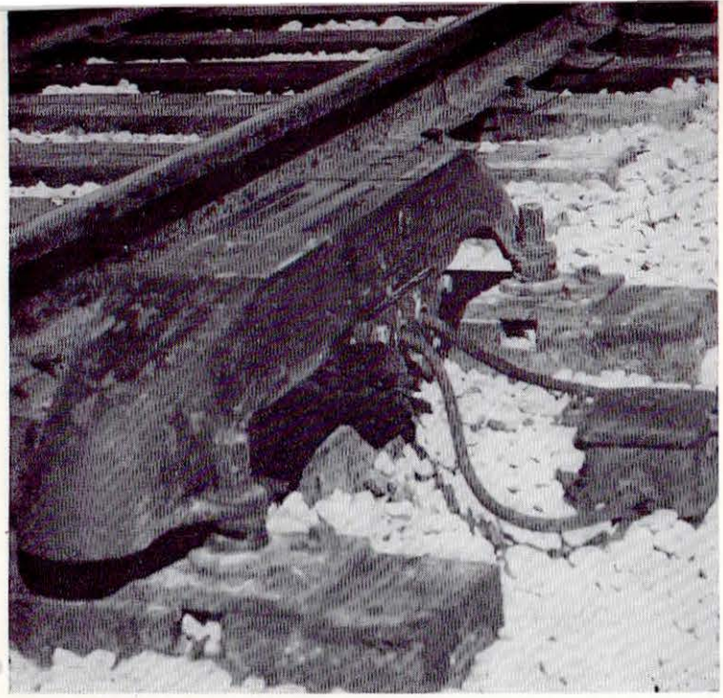
CENTRALIZED TRAFFIC CONTROL INSTALLED IN 1952

Railroad and Location	Miles of Road	No. of Power Operated Switches	No. of Signals Controlled by Levers	No. of Intermediate Automatic Signals	Manufacturer
AT&SF					
Pueblo, Colo.	0.1s	4	8	..	Union
Trinidad, Colo.—Lynn, N.M.	0.8s 17.8d	26	44	16	Union
Bakersfield, Cal.—Calwa	107.5s	45	129	92	Union
ACL					
Florence, S.C.—S. Florence	2.7d	4	7	..	Union
Santee Bluff, S.C.—Etta	3.3s	3	7	2	Union
Cordele, Ga.—Fitzgerald	37.0s	8	26	10	Union
Manchester, Ga.—Haralson	28.8s	8	24	8	Union
B&O					
Bridgeport, W.Va.—Clarksburg	3.3d	9	11	..	G.R.S.
CNR					
GTW					
W. Pontiac, Mich.—Durand	36.2s	9	28	20	Union
C&O					
Westham, Va.—Bremo	54.8s 4.0d	15	48	2	Union
Balcony Falls, Va.—Holcomb Rock	16.0s	9	23	..	Union
Scott, W.Va.—Barboursville	16.5d	14	16	4	Union
Newkirk, Ohio—Fowlerton, Ind.	91.0s	24	86	46	Union
Griffith, Ind.	1.8s	6	9	..	Union
PM District					
Plymouth, Mich.—Romulus	11.8s	1	3	4	G.R.S.
CB&Q					
Brookfield, Mo.—Maxwell	74.5s	19	62	24	Union
Clinchfield					
Erwin, Tenn.—Spartanburg, S.C.	140.0s	20	46	60	Union
D&H					
W. Waterford, N.Y.—Ballston Spa	12.5s 6.0d	47	49	10	G.R.S.
DSS&A					
Negaunee, Mich.	2.8s	7	22	4	G.R.S.
Erie					
Randolph, N.Y.—Waterboro	5.9s	..	3	2	Union
IC					
Lake Cormorant, Miss.	1.5s	1	6	1	Union
L&N					
Calera, Ala.—Montgomery	62.0s	13	44	28	G.R.S.
MeC					
Waterville, Me.—Waterville East	1.6d	10	9	2	
PT					
Rigby, Me.	1.3d	6	5	2	
MP					
Raddle, Ill.—Gale	4.3s 34.0d	26	60	54	G.R.S.
NYC&StL					
Argos, Ind.—Knox	21.0s	3	8	2	Union
N&W					
Disputanta, Va.—Po	8.8d	4	4	12	Union
Lynchburg, Va.—Forest	8.5s	..	..	13	Union
Forest, Va.	3.6d	12	12	..	Union
Waynesboro, Va.—Stuarts Draft	10.1s	2	12	4	Union
Powhatan, W.Va.—Big Four	19.6d	13	23	14	Union
PRR					
Truxall, Pa.—Apollo	3.5d	5	5	..	Union
StL-SF					
Hammond, Kan.—Paola	50.0s	10	30	33	Union
StLSW					
Pine Bluff, Ark.—Brinkley	67.7s	13	58	28	Union
SAL					
Atlanta, Ga.	4.5s 1.6d	1	39	8	Union
Birmingham, Ala.	1.9s	1	11	..	Union
Moncure, N.C.—Aberdeen	33.6s 10.2d	18	39	19	Union
Coleman, Fla.—W. Palm Beach	....	27*	30*	..	Union
Hialeah, Fla.	....	7	10	3	Union
Soo Line					
Duplainville, Wis.	0.6s	..	4	..	G.R.S.
SOU					
AGS					
Akron, Ala.—Meridian, Miss.	70.0s	9	37	49	G.R.S.
CNO&TP					
Boyce, Tenn.—Daisy	12.5s	4	14	11	G.R.S.
TH&B					
M.P. 39.26-M.P. 37.16	2.1d	30	32	..	G.R.S.
UP					
Menoken, Kan.—Rudy, Neb.	144.0s	31	124	104	Union
Rieth, Ore.—Hinkle	28.0s	10	28	18	Union
Wabash					
Camden, Mo.—Birmingham Jct.	22.8s	7	25	12	Union
Decatur, Ill.	2.7s	..	7	..	Union
WM					
Plainfield, Pa.—Reid, Md	10.0s 11.1d	7	20	21	Union
WP					
Alazon, Nev.—Salt Lake City, Utah	213.6s	42	165	110	Union
Totals	1,394.1s 147.7d	597	1,512	852	
Miles of Road	1,541.8				
Miles of Track	1,689.5				

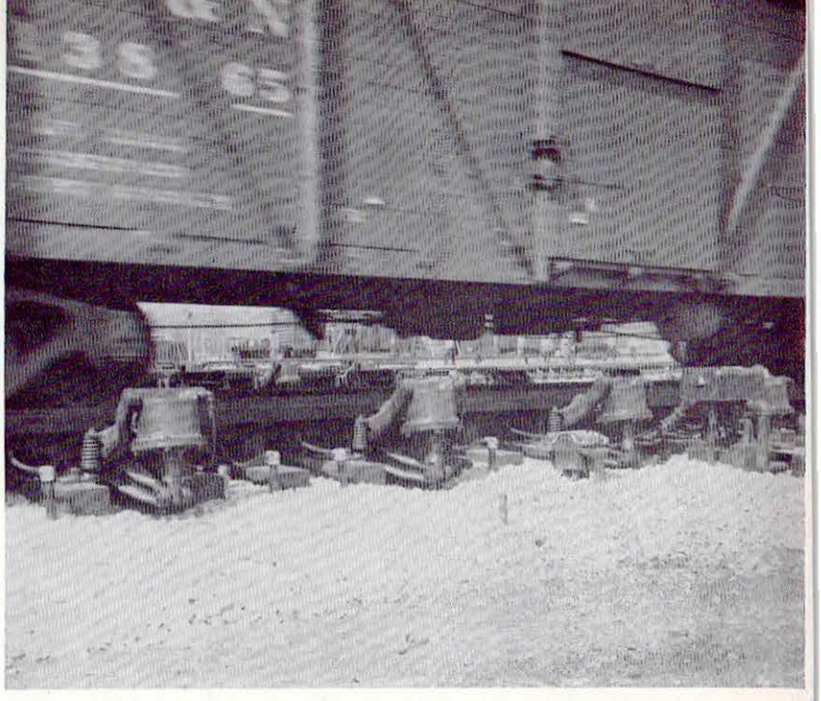
* Added to existing CTC.

NEW INTERLOCKINGS INSTALLED IN 1952

Railroad and Location	No. of Home Signals	No. of Switches	Manufacturer
AT&SF			
Saginaw, Tex.	3	1	Union
ACL			
Lanes, S.C.	3	1	Union
B&O			
Baltimore, Md., (Bay View)	..	4	G.R.S
Baltimore, Md., (Mt. Royal)	5	12	G.R.S.
Brook, Pa.	4	5	G.R.S
B&M			
Clematis Brook, Mass.	5	3	G.R.S
CNR			
Mimico, Ont., (West End)	15	19	G.R.S.
Mimico, Ont., (East End)	14	18	G.R.S.
Montreal, Que.	12	19	Union
Mount Royal, Que.	6	2	.....
Portage la Prairie, Man.	17	15	G.R.S.
CPR			
Medonte, Ont.	13	6	G.R.S.
East Coulee Bridge, Alta.	2	..	
CofNJ			
Allentown, Pa.	33	36	Union
Wilkes-Barre, Pa.	16	12	Union
C&O			
PM District			
Plymouth, Mich.	31	13	G.R.S.
C&EI			
Evansville, Ind.	3	..	
CB&Q			
Sumner, Mo.	6	1	Union
CRI&P			
Davenport, Iowa	6	3	Union
DM&IR			
Duluth, Minn.	32	13	G.R.S.
GN			
Bennett Mine Spur, Minn.	4	1	G.R.S.
Cut Bank, Mont.	4	2	G.R.S
LV			
Sugar Notch, Pa.	3	1	G.R.S.
Hazelton, Pa.	5	2	
South Wilkes-Barre, Pa.	3	1	G.R.S.
Sugar Notch, Pa.	4	..	Union
L&N			
Strawberry, Ky.	5	3	Union
New Orleans, La.	8	4	Union
MTA			
Boston, Mass.	16	26	Union
NYC			
Belle Isle, N.Y.	5	3	G.R.S.
Lyons, N.Y. (SS 15)	28	26	G.R.S.
Lyons, N.Y. (West Shore)	3	1	G.R.S.
Lyons Jct., N.Y.	3	1	G.R.S
Thompson, N.Y.	4	3	G.R.S
Rochester, N.Y.	12	11	G.R.S
Buffalo, N.Y.	6	6	G.R.S
Corning, N.Y.	4	..	G.R.S.
North Port Byron, N.Y.	6	8	G.R.S.
Thornhill, Ohio	8	6	G.R.S.
CCC&StL			
Middletown, Ohio	6	4	G.R.S.
P&LE			
West Pittsburgh, Pa.	1	1	Union
NYC&StL			
Fort Wayne, Ind.	9	1	Union
Conneaut, Ohio	6	3	Union
NYNH&H			
Canton Jct., Mass.	11	7	Union
PRR			
Truxall, Pa.	11	8	Union
Reading			
Phoenixville Tunnel, Pa.	4	..	G.R.S.
RF&P			
Alexandria, Va.	5	2	Union
North Acca, Va.	12	14	Union
SAL			
Birmingham, Ala.	4	..	Union
Soo Line			
Glenwood, Minn.	6	4	G.R.S
SOU			
Irondale Jct., Ala.	5	5	G.R.S.
Leeds, Ala.	8	2	G.R.S.
AGS			
Watts Jct., Ala.	3	1	G.R.S
Pape Jct., Ala.	3	1	G.R.S
Union			
Bessemer, Pa.	2	3	Union
UP			
Green River, Wyo.	11	8	Union
Hinkle, Ore.	3	3	Union
Wabash			
Forrest, Ill.	6	4	Union
Decatur, Ill.	7	5	Union
Totals	480	364	



Intermittent inductive train stop systems were installed on 754.8 miles of track in 1952.



Car retarders were installed in seven new or modernized yards during 1952.

CAR RETARDER PROJECTS PLACED IN SERVICE DURING 1952

Railroad and Location	No. of Retarders	Rail-Feet Retarders	No. of Switches	No. of Track Circuits	Signals	No. of Towers	No. of Control Machines	Manufacturer
CofNJ Allentown, Pa.	4	326	18	18	18	1	1	Union
CMStP&P Milwaukee, Wis.	5	429	27	170	19	1†	1	Union
EJ&E Gary, Ind	11	950	61	114	8	1*	1	G.R.S.
IC Markham, Ill.	12	1,510	62	62	4	2*	2	Union
N&W Norfolk, Va.	5	446	29	29	15	1*	1	G.R.S.
SOU AGS Birmingham, Ala.	8	842	56	112	10	1*	1	G.R.S.
SP Roseville, Cal.	12	1,510	51	51	4	2	3	Union
Totals	57	6,013	304	556	78	9	10	

* Automatic switching
† Automatic switching and retarder speed control.

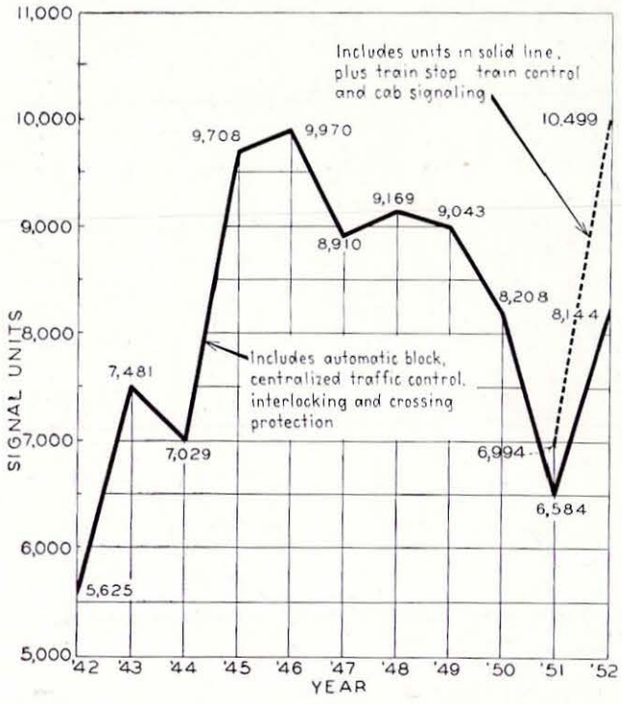


Chart showing signaling units installed each year.

ton have installed C.T.C. extensively, and such projects are authorized for 1953.

This 212-mile 1952 project on the Burlington-Rock Island could turn out to be the last extensive installation of single-track automatic block in territory not previously signaled. A new rule of thumb could be that "if the number of trains justifies automatic block, the relatively small additional cost of C.T.C. can easily be offset by greater savings in train time and operating expenses." In making signaling studies, one road has given special consideration to changes that logically may be expected in train operations, and to the difficulties and expenses involved in maintaining open offices, needed with automatic block but not with C.T.C.

Several roads, such as the Boston & Maine, the Milwaukee and the Erie, have changed extended sections from double track to single track with centralized traffic control. In 1952, the Southern completed a 66-mile project of changing from double to single track with C.T.C. One reason for making such changes has been to avoid the expense of replacing rail due for renewal.

Compared with double track with hand-throw switches, single track with C.T.C. power switches actually saves time when one train takes siding to let another of the same direction pass. Centralized traffic control reduces to a minimum the time required for meets on single track, the results depending on the number of such meets to be made within peak periods. Actual time-distance studies will determine whether a change to single track is practicable.

On a 38-mile section of four main tracks, the New York Central removed a fourth track and signaled one of the others for operation in both directions. On sections of busy double track, rather than add a third track, the practice today is to install C.T.C. with signaling for both directions on both tracks, and with crossover layouts about 10 to 15 miles apart, so that both tracks can be used in either direction to run faster trains around slower ones. The major objective is to keep all trains moving rather than allow delays on sidings or in yards. This is being done on extended sections of the Rock

HIGHWAY-RAILROAD GRADE CROSSING PROTECTION INSTALLATIONS FOR 1952

Railroad	Number of Crossings Protected by New Installations: Number of Crossings at Which Flashing-Light Signals Only Were Installed	Number of Crossings Protected by New Installations: Number of Crossings at Which Electrically-Operated Gates and Flashing-Light Signals Were Installed	Number of Crossings Indicating Source of Funds: Railroad	Public Funds (Any Source)	Joint Railroad and Public Funds
AT&SF	59	2	43	1	17
A&WP	1	..	1	..	..
GaRR	5	..	..	..	5
ACL	26	16	15	..	27
B&O	21	10	25	2	4
B&A	8	..	..	..	8
B&LE	1	..	..	1	..
B&M	4	13	13	1	3
CNR	49	10	..	6	53
GTW	5	5	2	1	7
CPR	41	4	..	3	42
CofG	7	1	4	..	4
CofNJ	2	23	25	..	..
C&WC	4	6	7	3	..
C&O	5	10	14	..	1
PM District	12	2	2	2	10
C&EI	2	..	..	..	2
C&NW	23	13	9	..	27
CB&Q	10	3	5	..	8
CGW	7	..	1	..	6
CI&L	3	1	4	..	..
CMStP&P	30	5	10	2	23
CNS&M	..	6	6	..	..
CRI&P	12	14	17	4	5
CSS&SB	..	2	2	..	..
Clinchfield	3	..	2	..	1
C&S	4	3	7	..	..
D&H	5	4	8	..	1
DL&W	8	1	9	..	..
D&RGW	2	3	5	..	..
DT&I	2	..	2	..	..
DM&IR	4	1	2	..	3
DSS&A	1	1	1	..	1
EJ&E	..	9	6	1	2
Erie	17	24	35	2	4
FEC	..	24	20	..	4
G&F	3	..	3	..	..
GN	12	8	14	2	4
GB&W	..	..	..	..	..
KGB&W	1	..	..	..	1
GM&O	6	9	6	1	8
IC	21	6	9	3	15
IT	2	..	1	..	1
KCS	9	..	4	..	5
LS&I	1	..	1	..	..
L&NE	4	..	..	..	4
LV	11	10	20	..	1
LI	..	5	5	..	..

Railroad	Number of Crossings Protected by New Installations: Number of Crossings at Which Flashing-Light Signals Only Were Installed	Number of Crossings Protected by New Installations: Number of Crossings at Which Electrically-Operated Gates and Flashing-Light Signals Were Installed	Number of Crossings Indicating Source of Funds: Railroad	Public Funds (Any Source)	Joint Railroad and Public Funds
L&N	13	..	8	2	3
MEC	4	1	..	..	5
PT	4	..	3	..	1
M&StL	2	..	2	..	..
M-K-T	29	..	21	..	8
MP	32	9	31	..	10
GCL	19	..	18	..	1
IGN	22	3	21	..	4
NYC	17	25	37	..	5
CCC&StL	11	18	23	..	6
IHB	..	3	1	2	..
MC	9	3	3	1	8
P&LE	..	3	3	..	..
NYC&StL	34	10	35	..	9
NYNH&H	46	4	..	..	..
N&W	19	12	22	..	9
NS	1	2	..	1	2
NP	14	..	9	4	1
PE	15	..	2	8	5
PRR	33	28	29	3	29
PRSL	2	11	13	..	..
P&WV	1	1	2	..	..
QC	1	..	..	..	1
Reading	3	10	11	..	2
StL-SF	16	3	13	..	6
StLSW	4	..	3	..	1
SAL	18	10	6	3	19
Soo Line	11	1	3	..	9
SOU	21	13	14	..	20
AGS	2	..	1	..	1
GS&F	2	..	..	..	2
NO&NE	2	..	1	1	..
NOT	1	..	1	..	..
SP	24	4	1	6	21
T&NO	32	3	9	3	23
SP&S	3	..	2	1	..
TC	14	..	14	..	..
TRRAStL	..	3	3	..	..
T&P	8	4	7	3	2
TP&W	3	..	..	..	3
TH&B	1	..	..	..	1
UP	26	4	13	..	17
Virginian	2	..	1	..	1
Wabash	8	7	11	2	2
WM	2	..	1	1	..
WP	2	..	1	1	..
Totals	986	449	764	77	544

AUTOMATIC TRAIN CONTROL INSTALLED IN 1952

Railroad and Location	Miles of Road	No. of Locomotives and Multiple-Unit Cars Equipped for Automatic Train Control	No. of Aspects Displayed by Cab Signals	Manufacturer
LI				
Sunnyside, N.Y.—Port Washington	3.7s 12.1d	..	3	Union
Jamaica, N.Y.—Babylon	27.6d	..	3	Union
Sunnyside, N.Y.—Jamaica	7.2*	334	3	Union
Totals	3.7s 39.7d 7.2*	334		
Miles of Road	50.6			
Miles of Track	111.9			

* Four track.

CAB SIGNALING INSTALLED IN 1952

Railroad and Location	Miles of Road	No. of Locomotives Equipped with Cab Signals	No. of Aspects Displayed by Cab Signals	Manufacturer
CMStP&P				
Sturtevant, Wis.—Lake	17.6d	..	3	Union
PRR				
New Paris Ohio—Xenia	51.7s	164	4	Union
UP				
Sidney, Neb.—Cheyenne, Wyo.	102.0d	55	3	Union
Troutdale, Ore.—Portland	15.0s	..	3	Union
Totals	66.7s 119.6d	219		
Miles of Road	186.3			
Miles of Track	305.9			

Island, the Chicago & North Western, the Boston & Maine, the New York Central, and the Atlantic Coast Line, among other roads.

In the last decade, the word "interlocking" has acquired a different meaning. In the old days, mechanical or power interlockings were controlled locally by levermen, and as recently as 1941 there were, in the United States, a total of 6,770 interlockings. This had been reduced to 4,339 by January 1, 1952. This reduction has resulted from several factors.

New centralized traffic control projects often dispense with locally controlled mechanical interlockings at outlying junctions, thus accounting for a considerable portion of the reduction in the number of interlockings. Furthermore, many new power interlockings being installed include controls which replace several old locally controlled interlockings. Control by one man from one machine results in better coordination of train operations, and the operating savings soon pay for the new interlocking.

Though there are 2,331 fewer separate interlockings than there were ten years ago, interlocking protection in an improved form is actually in service now at thousands of locations not so protected ten years ago. The number of new power switches and home signals installed each year is a better measure of these new facilities than is the number of separate plants. For example, in 1952, 1,565 power switches and home signals were

AUTOMATIC TRAIN-STOP INSTALLED IN 1952

Railroad and Location	Miles of Road	No. of Locomotives or Self-Propelled Cars Equipped	Manufacturer
AT&SF			
Fort Madison, Iowa—Shopton	3.7d	304	Union
C.A. Jct., Mo.—Sibley	5.1d	..	
Holliday, Kan.—N.R. Jct.	113.1s	..	Union
N.R. Jct., Kan.—Merrick	3.4d	..	Union
Newton, Kan.—McGraw Jct.	2.9s	..	Union
	1.0d		
North Wichita, Kan.—N. Jct., Wichita	3.0d	..	Union
South Wichita Jct., Kan.	1.5s	..	Union
Mulvane, Kan.	1.3s	..	Union
W.N. Jct., Kan.	0.4s	..	Union
	2.0d		
Arkansas City, Kan.	1.1d	..	Union
Arkansas City, Okla.—Newkirk	12.8d	..	Union
Dodge City, Kan.	1.9d	..	Union
La Junta, Colo.	1.6s	..	Union
	0.8d		
Trinidad, Colo.	3.1s	..	Union
	0.7d		
Lamy, N.M.	1.9s	..	Union
Albuquerque, N.M.	1.7d	..	Union
Gallup, N.M.	1.3d*	..	Union
	0.9d		
Winslow, Ariz.	2.1d*	..	Union
	0.9d		
Pisgah, Cal.—Dagget	30.5d	..	Union
Daggett, Cal.—Barstow	10.4d	..	Union
Oro Grande, Cal.—Lugo	17.7d*	..	Union
Hobart, Cal.—Fullerton	2.2s	..	Union
	16.5d	..	
Santa Ana, Cal.—Venta	2.5d*	..	Union
Bakersfield, Cal.—Calwa	105.0s	..	Union
	1.0d		
Calwa, Cal.—Stockton	117.2s	..	Union
C&NW			
Chicago, Ill.—Wyeville, Wis.	102.4s	289	G.R.S
	133.6d		
MTA			
Boston, Mass.	2.8d	..	Union
NYC			
Belle Isle, N.Y.—Lyons	38.0d†	..	G.R.S.
B&A			
Riverside, Mass.—Framingham	9.6d†	..	G.R.S
Totals	452.6s	593	
	233.8d		
	23.6*		
	47.6†		

Grand total, cab signaling, train stop and automatic train control
Miles of Track 1,409
Number locomotives or self-propelled cars 946

* One track of double track.
† 4th track removed, 3rd track signaled for reverse movements.

installed at new and rebuilt interlockings, an increase of 165 over 1951. At outlying crossings of two railroads, manually operated mechanical plants have been replaced by automatic interlockings, 27 such plants being installed in 1952, as compared with an annual average of about 15 during the previous ten years.

In 1952, the railroads were active in the construction of new classification yards as a means of expediting operations and reducing the overall time of freight between shippers and consignees. A record was set in the number of power switches and retarders installed in yards, the 361 such units being more than for any previous year. Several similar projects are under way or planned for 1953.

Also, 1952 saw advances in the control systems for power switches and retarders. In January the Reading completed a project at East Rutherford, Pa., a new feature of this equipment, made by the General Railway Signal Company, being that the push-buttons for automatic switching are not at the hump but are on the panel of the control machine in the tower. Thus, one man controls the switching and all the retarders in the entire yard which has 33 classification tracks.

Another "first" for 1952 was the installation of retarder speed control in a yard of the Milwaukee at Milwaukee, Wis. One machine, which controls automatic switching and all the retarders, has an additional function developed by the Union Switch & Signal Division of the Westinghouse Air Brake Company, in which the speed of a car, or cut of cars, within the length of a retarder, controls the operation of the retarder automatically. This was explained in the June 30, 1952, *Railway Age*.

These new controls, such as automatic switching and retarder speed control, help increase the average operating capacity of a yard, and also improve coordination of operations, because they enable one man to control all the switches and retarders in a yard with 35 tracks or more. The applicability of these new control systems depends somewhat on the number of tracks in a yard. For example, the Central of New Jersey did not consider either of the new control systems necessary for its new 18-track yard at Allentown, Pa. Of seven yards completed in 1952, five include automatic switching, and one of these also includes retarder speed control.

In 1952, for the first time in many years, several railroads made extensive installations of train stop, train control and cab signaling systems. The most extensive of these is the intermittent inductive train-stop project on the Santa Fe which has been under way for the past two years, being completed and placed in service as a whole in 1952. Also, last year, the Chicago & North Western installed intermittent inductive train stop on 102 miles of single track and 133 miles of double track, including 289 locomotives, covering the major portion of the route of the "400" between Chicago and St. Paul.

Cab signaling was installed on 117 road-miles of the Union Pacific and 52 miles on the Pennsylvania. The 1952 installations of cab signaling, train stop and train control totaled 1,409 track-miles and 946 locomotives. The Union Pacific has further cab signaling in prospect, and such a project is under way on the Burlington. The Pennsylvania is working on an extensive installation of automatic speed control, including cab signals and automatic application of brakes, on 1,100 route-miles. Most of these territories were previously equipped with cab signaling which is a necessary part of the new system.

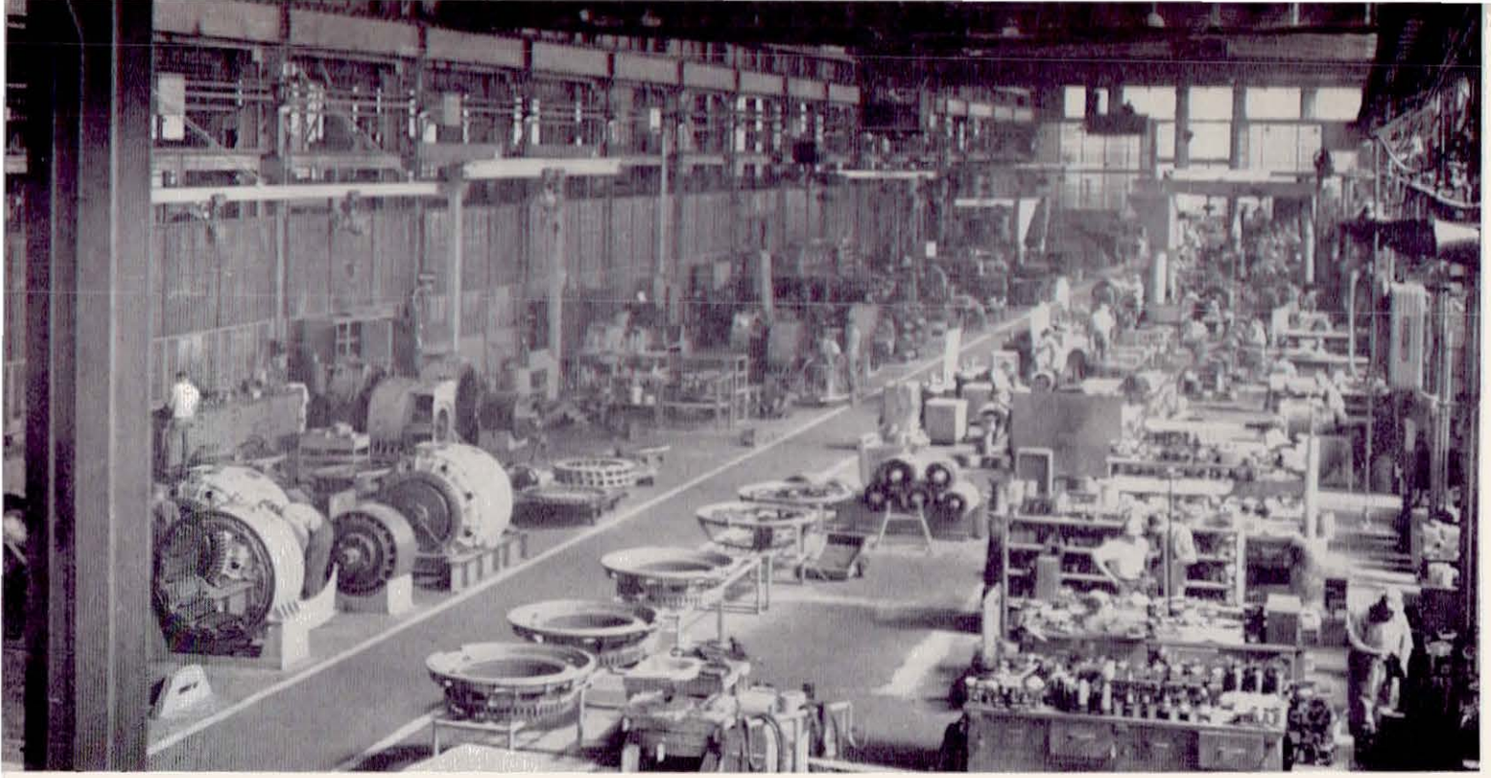
Crossing Protection at High Level

In 1952, the railroads installed new highway crossing protection at 1,435 crossings, as compared with 1,406 in 1951, and a peak of 1,573 in 1950. In 1952, flashing-light signals were installed at 986 crossings. At crossings with two or more main tracks, or single track handling fast trains, the tendency now is to install gates, this being evidenced by the installation of gates with flashing lights at 449 crossings during 1952.

In 1952, the protection installed at 764 crossings was paid for by railroads; at 77 crossings, by public funds; and at 544 crossings, jointly by the railroads and public funds.

A "first" for 1952 was the development and installation of a new system which automatically identifies the direction and number of a train clearing a manual block at an outlying unattended location, transmitting this "OS" automatically to the dispatcher's office. This system, which includes the use of coded carrier and other electronic equipment, was made by the General Railway Signal Company. Engineers of this company cooperated with signal engineers of the Erie in planning the adaptation of this equipment in a train identification project, placed in service on the Erie at Waterboro, N.Y., on October 26.

Plans have been made and materials ordered for numerous large signaling projects for 1953. Although some equipment manufacturers have fairly large backlogs of orders, deliveries of conventional apparatus can be made within reasonable time. Also, copper for insulated wire and cable has become more plentiful.



How much to do and how much not to do in heavy electrical repairs is a current problem for most roads.

Railroad Officers Establish

One Clearing House for Electrical Practices

Since electrical work is widely diversified and has increased enormously in volume, all association work involving engineering, operating and maintenance practices and standards is now coordinated under a single Electrical Section

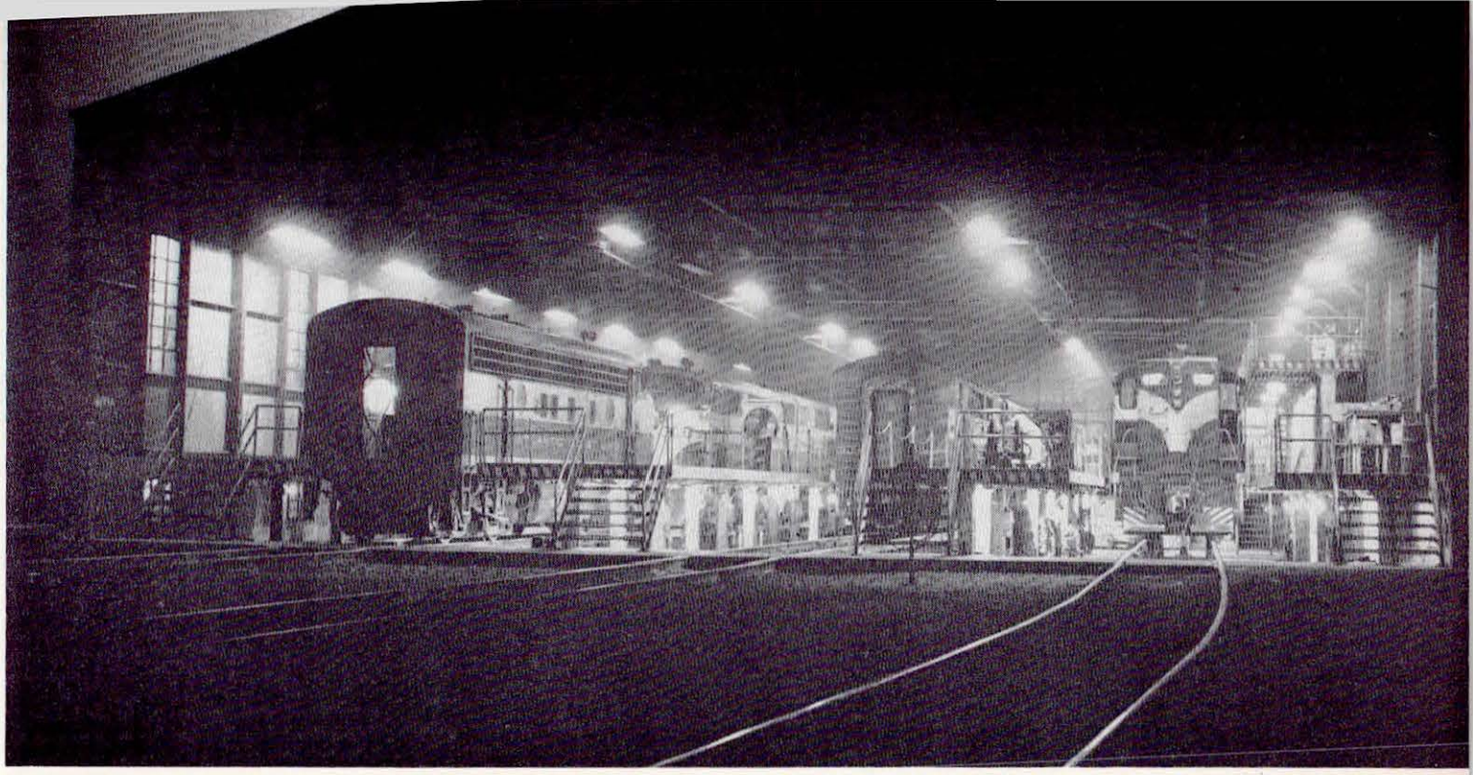
By ALFRED G. OEHLER
Electrical Editor

The diesel locomotive continues to be the central figure of things electrical in the railroad field, but there are many other activities making insistent demands on the time and attention of the electrical man on the railroad. The diesel has progressed through several stages and it seems possible to predict one or two more through which it must pass. First, it was a switcher, then it took over preferred runs, respectively in passenger and freight service. Now it enters into the least profitable stage, when it must assume nearly all motive power responsibilities. Then, with full dieselization, it will do better since steam facilities can be scrapped. After that, it would appear that improved and higher-powered diesels will be required for preferred runs to meet growing outside competition.

How much of a heavy electrical shop it should have concerns nearly every railroad. Put another way: How much heavy electrical repair work should be done by a railroad and how much should be performed by outside service shops? There are those who believe the railroads, by and large, are still not sufficiently cost conscious when it comes to diesel maintenance and operation. In this connection, it is to be remembered that, until comparatively recently, the primary requirement has been to keep an unfamiliar appliance rolling. Now railroads are becoming more aware of costs.

Some day diesel maintenance costs will reach equilibrium, and may even decline, but up to now they are still rising. A few immediate problems are: What shall be done about locomotive rewiring; should commutators of repaired motors be seasoned; what can railroads do about flashovers; can electrical equipment satisfactorily be cleaned in place; to what extent can locomotive electrical equipment be standardized? Many men who have never done it before are learning to read wiring diagrams and these, too, are in need of standardization.

Spectroscopic analysis of lubricating oil is now widely accepted as an important aid to good engine operation and the electron microscope is being introduced to this field.



Good lighting is essential if railroad facilities are to be used to the best advantage.

In the field of straight electric traction two new types of locomotives have been introduced. One of these is a series a.c. type equipped for dynamic braking and capable of operation at much lower speeds than its prototypes which preceded it. The other is a rectifier-type locomotive taking high-voltage a.c. power from the contact system and employing standard diesel locomotive motors to drive the axles. A second railroad has endorsed this development by ordering 10 such locomotives and 100-multiple-unit passenger cars. Engineers are now suggesting that such locomotives, taking power at commercial frequencies from the contact system, could in some locations produce better and lower cost motive power than the diesel.

The Turbine-Electric Locomotive

The second type of gas-turbine-electric locomotive developed in America (Westinghouse) has now successfully come through its service testing period. The performance of the test unit of the first type (General Electric) has resulted in the Union Pacific's ordering 25 locomotives, six of which are now in regular service. The remainder are scheduled for delivery in 1953 and 1954. Two steam-electric locomotives using high-pressure steam boilers will be delivered in the near future.

Greatly increased power requirements characterize developments in the passenger car field. The most recently built cars having large power requirements are the full-length dome cars placed in service on the Milwaukee. They are equipped with 20 tons of refrigeration and powered by two 25-kw. undercar engine-driven power plants.

New diners using electric refrigeration, as well as air conditioning and, in some cases electric cooking, also require dual power plants, some of which are engine- and some axle-driven. Several simplified control systems for car heating and air conditioning have been introduced.

Two manufacturers are now making axle-driven caboose power supply units employing a.c. induction-type generators with static rectifiers to produce d.c. power. Both belt and gear drives for these generators are available.

Power and Light

Electric power for fixed facilities continues in increased demand. A diesel locomotive service shop capable of handling 30 to 35 single diesel units per 24-hr. period requires a total connected load of 350 hp. With the availability of highly efficient mercury and fluorescent lamps it has become economically practicable to equip railroad shops with lighting systems providing lighting intensities of 30 to 50 footcandles with higher values for specific applications.

With labor costs increasing much faster than the cost of electrical energy, electric track switch heating becomes constantly more attractive.

Demands for standby power for passenger cars in yards and terminals has led, in some cases, to the use of two 100-amp., 220-volt, 3-phase wayside receptacles connected to duplicate receptacles on the cars.

The Electrical Section

The separate Electrical Sections of the Mechanical and Engineering Divisions of the Association of American Railroads have combined in a single Electrical Section, serving both divisions. This arrangement conforms closely with the way electrical work is handled on most railroads.

In the past the Electrical Sections held their meetings in the fall with the Coordinated Mechanical Associations, but in June 1953 the section will meet in conjunction with sessions of the Mechanical and Purchases and Stores Divisions of the A.A.R. This change will deprive the coordinated groups of direct contacts with the Electrical Section, but it is expected to place the latter in the best possible position to perform the ever-increasing amount of engineering and standardizing work which only this body can do.

CALENDAR OF LABOR AND WAGE EVENTS—1952

By JOHN S. GALLAGHER, JR.
Associate Editor

At the beginning of the year three operating unions—The Brotherhood of Locomotive Firemen & Enginemen, Order of Railway Conductors, and Brotherhood of Locomotive Engineers—were still relentlessly seeking greater wage and rule concessions. The B. of L.F.&E. case was in the hands of an emergency board, before which the union refused to appear. The O.R.C., having exhausted all the recourses of the Railway Labor Act, was actively exploring other avenues for attaining its demands. The B. of L.E. was casting about for a way to enforce its demands. A dispute with 17 non-operating unions over a union shop agreement was before an emergency board. Although dealings between the railroads and the other unions were, on the surface, "quiet," unrest and controversy existed behind the scenes and the Army was in control of U. S. railroads.

Jan. 8 Emergency board resumes hearings on non-operating unions' demands for union shop and check-off of dues.

Jan. 21 Canadian unions seek—without success—government aid in obtaining an "interim" cost-of-living wage boost. Contracts with railroads bar any changes before Sept. 1.

Jan. 24 Emergency board recommends settlement of dispute with Brotherhood of Locomotive Firemen and Enginemen along lines established by previous settlement with the Brotherhood of Railroad Trainmen and Switchmens' Union of North America. Rejected by the B. of L.F. & E. four days later.

Feb. 1 B. of L.F. & E. circulates strike ballots.

Feb. 15 Emergency board hearing union shop case of 17 non-operating unions recommends that the railroads adopt the union shop and check-off of dues.

March 9 Surprise strike by O.R.C., B. of L.F. & E., and B. of L.E. against New York Central lines west of Buffalo and the Terminal Railroad Association of St. Louis. Furtherance of wage case is given by unions as reason for strike. Halted by court injunction on March 11.

March 11 Maintenance-of-way employees on the Copper Range strike over wages and unsettled grievances.

March 22 B. of L.E., O.R.C., and B. of L.F. & E. ask court to "set aside for payment to employees such railroad funds as will fairly and justly compensate them for their service while an employee of the United States, and that all net profits after those payments be paid into the U.S. Treasury."

Apr. 1 Employees under conracts with cost-of-living "escalator" clauses receive 1-cent an hour pay cut.

Apr. 28 Copper Range maintenance-of-way strike settled with pay increases.

May 15 Eastern railroads hold first meeting with 17 non-operating unions to discuss union shop and dues check-off.

May 19 Three-year old dispute with three operating unions ends. B. of L.E., O.R.C., and B. of L.F. & E. agree to a 12½-cent increase, plus a 10-cent cost-of-living increase, for roadmen. Yardmen to receive 27 cents plus 10 cents, with provision for an additional 4 cents if and when individual railroads convert to the 40-hour week. Part of the increases were retroactive to October 1950, part to January 1, 1951, and part to March 1, 1951. No material change made in pooling of cabooses rule. A "principal change" recommended for handling disputes over interdivisional runs. "More than one class of service" rule to be arbitrated. Agreement approved by wage board May 21.

May 23 Following end of dispute with operating unions, governmental control of the railroads terminated.

June 9 U.S. Supreme Court rules the St. Louis-San Francisco and B.R.T. cannot oust colored train porters who perform the function of brakemen. The court described the issue as "concerning the power of the court to protect negro railroad employees from loss of their jobs under the compulsion of a bargaining agreement which, to avoid a strike, the railroad made exclusively with a white man's union."

June 21 Canadian operating and non-operating unions get together to formulate wage demands for presentation to the railroads. Demands, which include union shop, check-off of union dues, and escalator clauses, were presented to railroads on July 3 and referred to a 3-man conciliation board.

July 1 Escalator clause calls for 2-cent pay raise.

July 4 Great Lakes Licensed Officers Association calls strike on car ferries crossing Lake Michigan and Detroit river. Dispute is over wages.

July 17 O.R.C. and Pullman Company agree to mediate dispute over wages and working conditions. O.R.C. postpones strike set for July 29.

July 19 Announcement that 80 railroads have entered into an agreement with B.R.T. to place 5-day 40-hour week into effect for yard employees.

July 31 Non-operating unions recess union shop discussions with Western railroads, but continue discussions with Eastern railroads.

Aug. 29 Eastern railroads sign union shop agreement with 17 non-operating unions, effective Sept. 15. Agree to further negotiation of dues check-off.

Sept. 5 B. of L.F. & E. walks out on Chicago & Illinois Midland in dispute over new contract and unsettled grievances. National Mediation Board takes over following day, and men return to work.

Sept. 10 G.L.L.O.O. refuses to submit its dispute to arbitration. Railroad car ferry services completely suspended.

Sept. 21 G.L.L.O.O. reaches agreement with Ann Arbor to arbitrate dispute over wages. Ann Arbor car ferries resume operations.

Sept. 30 Union shop negotiations between non-operating unions and Western railroads resume.

Oct. 1 Escalator clause calls for 2-cent pay raise.

Oct. 3 Non-operating unions break off union shop negotiations with Western roads because these roads "reaffirmed their opposition to compelling employees to join a union against their will."

Oct. 21 Non-operating unions approach Western railroads individually on subject of union shop agreements.

Oct. 23 G.L.L.O.O. agrees to arbitrate dispute with Chesapeake & Ohio and Grand Trunk. Both railroads resume car ferry services.

Nov. 10 S.U.N.A. starts polling members on Chicago, Rock Island & Pacific on strike over unsettled grievances.

Nov. 21 Canadian Board of Conciliation recommends a "7-per cent plus 7-cents-per-hour" wage increase, and no union shop, in dispute with Canadian railroads.

Dec. 1 Arbitration board settled "more then one class of service" rule dispute by setting out terms and conditions under which train and engine service employees may be required to perform two or more classes or road service in a day or trip, and how they shall be paid.

Dec. 9 Hearings begin before a referee appointed by President Truman as to whether or not the U.S. government's wage stabilization policy will permit the annual wage improvements provided for in existing labor contracts.

Dec. 12 C&NW signs union shop agreement with non-operating unions. MKT signs four days later.

Dec. 29 Referee rules U. S. Government's wage stabilization policy permits annual "improvmeent" wage increases.

At the end of the year, mortorium provisions in existing agreements brought a condition of seeming calm. However, if the referee handling the annual wage "improvement" problem decides railroad employees are entitled to additional wage increases over and above present cost-of-living adjustments, there will be another upward turn in railroad wage costs. Those few unions not a party to the movement to obtain such increases undoubtedly will act immediately to obtain similar benefits for their members. The unions are expected to put their full effort behind the drive for "improvement" wage boosts and the union shop issue in order to "consolidate and hold gains made to date" under what promises to be a less labor-minded national administration. Many existing wage and rule contracts expire next October, at which time it is expected the railway labor scene may again show considerable activity.

Rail renewals are expected to rebound sharply this year following the slump that occurred in 1952 because of the steel strike.

Maintenance of Way Hits Rough Spots During Year

Strike of steel workers cuts rail renewals sharply, but crosstie insertions register slight gain—Dollar expenditures hold at peak level of the previous year

By MERWIN H. DICK
Engineering Editor

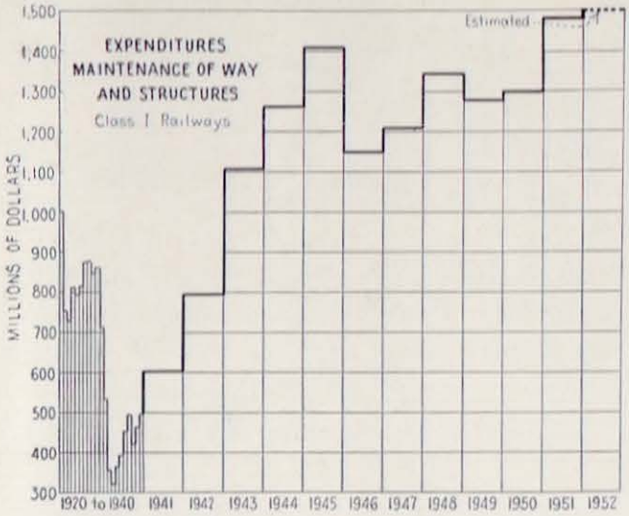
To some extent at least the heavy hand of fate dealt perversely with the plans and programs of railroad maintenance-of-way officers in 1952. As the year dawned, these officers as a whole had the "green light" for expanded programs of maintenance work involving the fixed properties. Operations based on these programs progressed satisfactorily almost until midyear, when the strike of steel workers occurred, putting a serious crimp in rail-laying work and also affecting other aspects of maintenance activity. Notwithstanding this untoward development, and a few other adverse factors, aggregate tie renewals showed a small gain for the year, and total maintenance-of-way and structures expenditures went up slightly to an all-time new high.

Using actual figures for the first nine months of the year as a basis, it is estimated that the Class I railroads of the country spent $1,500 million on the maintenance of their tracks and structures in 1952. Since this estimated figure is only $21 million above the actual expenditure for 1951 it is apparent that a slight error in the estimate could easily throw the comparison into the minus column. However the fact that the total dollar expenditure held up so well is rather surprising in view of a substantial decline in rail renewals. This suggests the conclusion that increases in other categories of maintenance work were more than sufficient to compensate for the reduced expenditures for laying rail, and also that inflationary factors were still at work during the year.

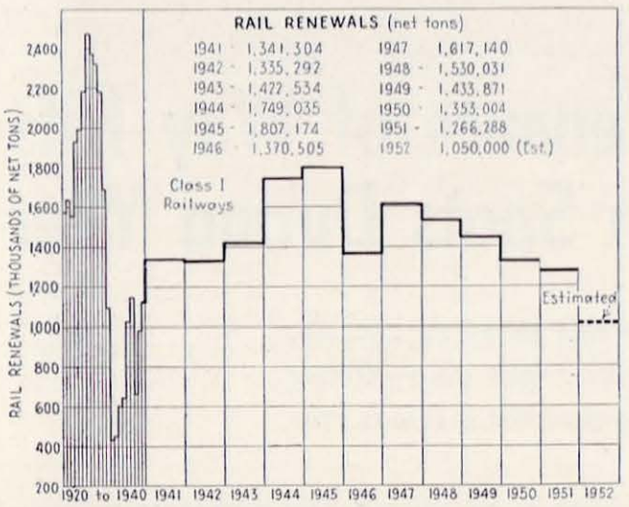
Effect of the Steel Strike

The monthly trend of maintenance expenditures during the year brings out sharply the effect that the steel strike had on this department's activities. For the first four months of the year maintenance activities as a whole, as reflected by the monthly dollar expenditures, were moderately to sharply higher than in 1951. In May the maintenance outlay dropped slightly below the corresponding month of the previous year. Then the steel workers went on strike on June 2 and remained off the job until July 26. Most railroads apparently had at least some new rail on hand at the time the rolling mills closed down, for the total maintenance expenditures in June held up fairly well, dropping only about $2 million, or 1.5 per cent, below June 1951.

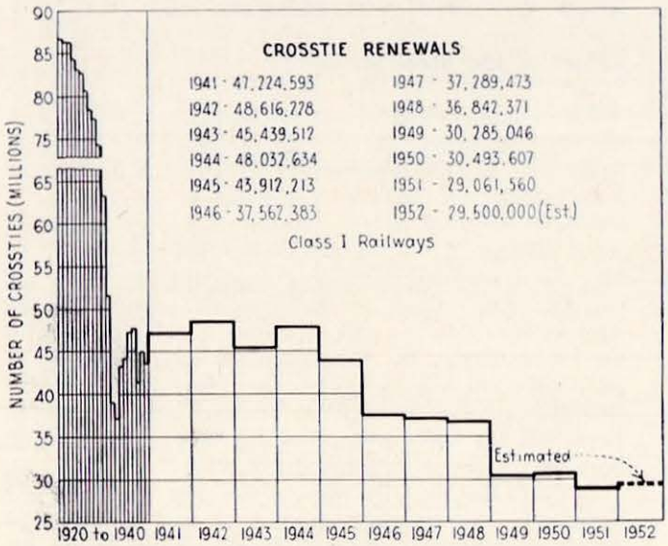
In July, however, by which time most railroads had apparently used up their supplies of new rail, maintenance expenditures dropped $13.4 million below the same month in 1951, a decrease of almost 10 per cent. In August, while the railroads were waiting for ship-



The fact that total maintenance expenditures held up so well in 1952 indicates that work not affected by the steel strike went forward on at least a normal basis.



One conclusion to be drawn from this chart of rail renewals is that there was certainly no improvement in the overall rail condition last year.



The flattening out of the tie-renewal curve in recent years affords support for the theory that at least a temporary trough in the renewal cycle has been reached.

ments of rail to be resumed following the opening of the mills, the maintenance expenditures were down approximately $9 million, or 6.7 per cent. In September, however, with new rail again available in quantity, there was a sharp reversal in the trend of maintenance expenditures. That month the total figure was up $11.2 million, or 9.2 per cent, from September 1951. Thus, at a time of the year when maintenance expenditures are normally trending downward, in 1952 they were turning upward. Indications are that the higher relative level was maintained throughout the remainder of the year.

The lack of new rail was not the only factor that caused maintenance activity to taper off during the steel strike. Because of the decline in revenues due to loss of traffic during the strike many railroads felt impelled to curtail maintenance activities in general as a means of helping to keep expenses in the proper relationship with revenues. This latter factor, however, was not universal, as business activity in some portions of the country was affected only to a minor extent by the steel strike.

There was no significant change in the maintenance ratio (maintenance expenses expressed as a percentage of operating revenues) during 1952. For the first nine months of the year this ratio was 14.6 per cent, as compared with 14.2 per cent for the 12 months of 1951. The ratio was thus maintained at about the same level that has prevailed, with minor variations, since the end of World War II. Efforts of maintenance officers to reduce the maintenance ratio have been complicated by the fact that freight rates are lagging far behind unit costs of wages and materials.

Rail Renewals—A Sad Story

What happened to rail renewals in 1952 was bad enough to bring tears to the eyes of a stone image. One of the accompanying charts shows the trend of rail renewals on the Class I railroads since 1920 and includes actual figures showing the net tons of new rail laid in replacement from 1941 to 1952, inclusive. The figure for the latter year (1,050,000 tons) is an estimate based on figures supplied to *Railway Age* by nearly all of the Class I railroads. It represents a decline of 216,300 tons, or 17.1 per cent, compared with 1951, and brings rail renewals to the lowest level since 1939.

To appraise the effect of the steel strike on rail renewals it is necessary to go back to the closing months of 1951 when the railroads were making up their rail-renewal programs for 1952. At that time, based on figures obtained from the larger railroads regarding their plans for rail renewals in 1952, it was estimated that the Class I roads planned to lay 1,611,700 net tons of new rail in that year. The steel strike forced the railroads to slice their programmed rail renewals by more than 560,000 tons. Obviously, therefore, a considerable tonnage must be added to the already large accumulated total of deferred maintenance in the rail condition.

In view of the shortage of new rail in 1952, it is logical to assume that the railroads are planning expanded rail-laying programs for this year. This assumption is confirmed by figures obtained from most of the Class I railroads regarding their projected rail programs for the year. Based on these figures it is estimated that the Class I roads as a whole hope to lay about 1,600,000 net tons of new rail during the year. It is fair to assume that most railroads, in formulating their rail-laying programs for 1953, have taken into consideration the question of whether they will be able to obtain their

Advances in the chemistry of weed and brush control are being reflected in right-of-way spraying activities.

Total crosstie insertions turned upward last year with indications that the uptrend will continue in 1953.

requirements. However, it is necessary to point out that the ability of the steel companies to provide the new rail will be influenced in an important degree by the international situation and other factors.

Tie Renewals Up Slightly

The tie renewal situation is somewhat more cheerful. Another of the charts shows the trend of tie renewals since 1920, and includes actual figures showing the number of ties inserted each year during the period from 1941 to 1952, inclusive. As with rail renewals, the figure for 1952 is an estimate made on the basis of data submitted by most of the Class I railroads. For 1952 it is estimated that these railroads inserted a total of 29,500,000 ties in renewals, an increase of 438,440, or 1.5 per cent, as compared with the official figure for 1951.

This upturn in tie renewals, as slight as it was, was significant. For one thing, it occurred in the face of a number of adverse developments, the most important of which, again, was the strike of steel workers, causing many railroads to adopt a retrenchment policy toward maintenance expenditures. Another adverse factor was the record flood in the Missouri river, which not only caused some railroads to divert maintenance gangs to flood protection and rehabilitation work but also resulted in the diversion of funds that otherwise would have been available for carrying out tie renewals and other maintenance work.

The fact that tie renewals showed an upturn in the face of these disturbing elements makes it possible to postulate that perhaps the tie-renewal cycle for the railroads as a whole has reached a trough and that, for the near future anyway, the tie-renewal curve may be expected to show an uptrend. The current rate of tie renewals presupposes a tie life in the neighborhood of 33 or 34 years. Actually, in spite of the efforts being made to prolong the life of ties through preservative treatment and protection against mechanical damage, track men generally agree that in practice they are not getting this much life from their ties at the present time. On the basis of this consideration alone it is reasonable to expect at least a moderate increase in tie renewals sooner or later.

Support for this theory is provided by an estimate of the volume of tie renewals programmed for 1953, based on figures submitted by practically all of the larger railroads. From these figures it is estimated that the Class I roads have projected tie-renewal programs for 1953 calling for the insertion of a total of about 31 million ties, an increase of 1.5 million ties, or 5.1 per cent, compared with 1952. Unlike the rail situation, indications are that the available supply of new crossties will be sufficient to satisfy this projected demand for the year, so that there will be nothing to interfere with the railroads' plans in this regard in the absence of adverse developments that cannot be foreseen.

During 1952 railroad maintenance-of-way and structures forces, hounded by increasing unit costs on the one hand and the necessity for economy on the other, continued unabated their efforts to develop more efficient practices and equipment. The reorganization of the forces to obtain more efficient working groups comprised a major aspect of these efforts. The more careful programming of maintenance-of-way work as a means of making more effective use of men and machines received increased attention during the year. There are indications that railroad managements are becoming increasingly aware of the advantages to be gained through this practice as compared with a "stop-and-go" policy determined by current fluctuations in railroad business.

Other Developments

During the year maintenance men continued their efforts to develop more durable materials, particularly ties, gave indications that they are becoming increasingly aware of the economies inherent in a clean, free-draining ballast section, and went forward with expanded programs for the effective control of weeds and brush on the right of way—programs that have been given increased impetus and effectiveness by advances in the chemistry of plant control. As a means of reducing the amount of maintenance work required at rail joints, there is not only continued interest in the use of continuous welded rail, but also in the development of joints, using either conventional or special joint bars, which are deliberately "frozen" without expansion gaps between adjacent rails, the object being to eliminate the effect of the joint.

Research activity designed to develop more economical engineering standards and maintenance practices is continuing at a high level. An allotment of $364,100 has been made to carry on research projects of the Engineering Division of the Association of American Railroads during 1953.

While this provision represents a reduction of $17,300 as compared with the budget for last year, it is understood that this reduction is due in part to the large sum to be expended for added physical facilities at the A.A.R. Research Center at Chicago during the coming year, a fact that in itself bespeaks increased research activity for the future.

Radio and inductive communications were installed on 664 locomotives, 383 cabooses and 80 wayside stations.

In 1952, the railroads installed yard loudspeaker systems totaling 2,677 loudspeakers and 161 control points.

Communications Modernized in 1952

More new circuit-miles and units of equipment placed in service than in any previous year—New developments include transistors, improvements in microwave, demonstrations of television and installations of electronic line multipliers

By R. W. McKNIGHT
Associate Editor

More railroad communications facilities, in the form of new equipment and miles of circuits, were installed in 1952 than in the previous year. The installation of road train communication continued at a high level, including 1,475 units. New yard radio included 529 units, compared with 305 for the previous year. A total of 2,677 loudspeakers and control points were installed in yards, and 1,057 such units were included in new intercommunications systems in freighthouses and locomotive shops.

The railroads installed telephone train dispatching on 2,447 miles; built 7,101 miles of pole line and replaced 19,347 miles of copper wire. New mileage of long-distance telephone circuits totaled 50,909 miles; telegraph circuits, 113,417 miles; and printing telegraph circuits, 175,696 miles. A large percentage of these new circuit-miles were derived by installing carrier, which is a form of high-frequency energy, superimposed on existing line wires.

Television made its debut on the railroads in 1952. Also, the railroads made their second installation of microwave, proving that this system can be made to operate over water as well as land. Another "first" in 1952 was a railroad installation in telephone service of the new device, the transistor, which is a possible replacement for vacuum tubes. Communications engineers of the Erie revealed the development and successful use of electronic line multipliers which are used to send a message simultaneously to two or more destinations.

Outstanding in road train communication during 1952 was the further development and application of means whereby calls can be originated in either direction between moving trains and the dispatcher. These calls are in addition to those between head and rear of trains, and between trains and wayside offices within normal radio range.

Last March the Northern Pacific completed a radio train communication project between Dilworth, Minn., and Mandan, N.D., 204 miles, including 10 wayside radio stations and radio equipment on all the cabooses and freight locomotives operating over this territory. Utilizing newly developed automatic switching equipment, the dispatcher's telephone line wires can be utilized between the dispatcher's office and any of these radio stations, so that calls can be established in either direction between the dispatcher and the conductor on moving freight trains on any part of this territory. If storms break the line wires between any two of the wayside radio stations, radio can be used to bridge the gap and thus maintain communications. This installation was described in the May 5, 1952, *Railway Age*.

The Southern Pacific is now completing a road train radio system on 155 miles from Sacramento, Cal., over the Sierra Nevada Mountains to Sparks, Nev. Radio is in service at four wayside stations, in the locomotives, and in the snow plows and flangers operating over this territory. In addition to the ordinary use of radio between trains, and between trains and wayside offices within range, calls can be originated in either direction between the Sacramento dispatcher's office and moving trains on the entire territory.

The installation of radio in yards and terminals increased by leaps and bounds during 1952, a total of 529 units being installed, compared with 305 the previous year. The 1952 projects included radio in 99 fixed

COMPARISON OF COMMUNICATIONS FACILITIES INSTALLED IN THE UNITED STATES AND CANADA

	1952	1951	1950	1949	1948	1947
Miles of new or rebuilt pole line	7,101	7,141	6,319	11,349	7,908	5,481
Miles of new copper line wire	19,348	14,838	8,665	15,558	19,833	5,721
Increase in miles of road dispatched by telephone	2,446	1,600	1,792	1,143	1,446	2,192
New mileage of long-distance telephone circuits	50,909	19,201	18,105	38,110	25,087	18,300
New mileage of telegraph circuits	113,417	47,260	58,075	45,061	24,395	13,511
New mileage of printing-telegraph circuits	175,696	28,058	33,051	38,684	31,036	31,280
New mileage of communication circuits derived by use of carrier	329,876	84,769	98,380	113,960	47,191	52,721
Total mileage of new communications circuits	340,022	94,519	109,231	121,855	80,518	63,091
Road train communications						
Number of locomotives equipped	664	615	205	132	168	36
Number of cabooses or other cars equipped	383	926	183	75	129	33
Number of fixed wayside stations	80	95	29	81	71	14
Number of walkie-talkie sets	348	....	....	....	....	....
	1,475	1,636	417	288	368	83
Yard radio communications						
Number of locomotives equipped	327	253	188	129	240	247
Number of fixed stations	99	52	54	21	43	51
Number of walkie-talkie sets	103	...	...	...	...	...
	529	305	242	150	283	298
Yard loudspeaker systems						
Number of control points	161	79	104	114	161	34
Number of two-way speakers	1,906	806	1,140	936	1,016	...
Number of paging speakers	771	305	387	591	775	...
Total number of speakers	2,677	1,111	1,527	1,527	1,791	436
Intercommunications systems freighthouses, etc.						
Number of control points	305	...	...	...	...	...
Number of telephones	338	...	...	...	...	...
Number of loudspeakers	779	...	...	...	...	...
Total number of telephones and speakers	1,117	...	...	...	...	...
Total number of communications equipment units	5,798	3,052	2,186	1,965	2,442	817

ROAD TRAIN COMMUNICATIONS INSTALLED IN 1952

Railroad and Location	Miles of Road	No. of Locos.	No. of Cabs. or Other Cars	No. of Fixed Ways Stas.	Manufacturer of Equipment	No. of Walkie-Talkie Sets
AT&SF						
Winslow, Ariz.—Belen, N.M.	268.0	14	39	..	Bendix	..
Winslow, Ariz.—Seligman, Ariz.	143.0	..	..	5	Bendix	..
A&WP-W of Ala.						
Atlanta, Ga.—Montgomery, Ala.	171.0	2	3	..	Motorola	3
B&O						
Connellsville, Pa.—Fairmont, W.Va.	70.0	5	..	..	Bendix	..
					Motorola	6
B&A System	616.0	6	..	4	Farnsworth	..
C of NJ						
Jersey City, N. J.—Scranton, Pa.	191.0	6	14	..	Motorola	11
C&NW						
Proviso, Ill.—Council Bluffs, Iowa	470.0	4	20	..	Westinghouse	..
					Motorola	20
CB&Q System	1,518.0	20	..	..	Westinghouse	..
					Motorola	114
CGW						
Kansas City, Mo.—Minneapolis, Minn.	1,500.0	..	6	15	Ry. R. Tel.	..
Chicago, Ill.—Omaha, Neb.		..	..	..	Motorola	2
CMStP&P						
Bensenville, Ill.—Milwaukee, Wis.	81.0					
Bensenville, Ill.—Savanna, Ill.	121.0					
Savanna, Ill.—Sioux Falls, S.D.	417.0	38	..	3	Bendix	29
Milwaukee, Wis.—Green Bay, Wis.	113.0					
St. Paul, Minn.—Austin, Minn.	115.0					
CRI&P System	7,916.0	40	42	..	Motorola	42
CSS&SB						
South Bend, Ind.—Kensington, Ill.	75.6	..	3†	..	Motorola	..
DM&IR						
Duluth, Minn.—Missabe Division	212.3	5*	5*	..	Ry. R. Tel.	..
Duluth, Minn.—Iron Range Div.	223.5					
Erie						
Jersey City, N. J.—Chicago, Ill.	998.7	97	1	..	Farnsworth	..
					Motorola	30
GB&W						
Green Bay, Wis.—Winona, Minn.	214.0	6	4	..	Motorola	8
KGB&W						
Green Bay, Wis.—Kewaunee, Wis.	36.0	6	2	..	Motorola	6
KCS						
Kansas City, Mo.—Port Arthur, Tex.	789.0	6*	6*	..	Harmon	..
L&A						
Hope, Ark.—Pineville Jct., La.	194.0					
Shreveport, La.—New Orleans, La.	505.0	..	3*	..	Harmon	..
Shreveport, La.—Farmersville, Tex.	184.0					
MP System	7,139.0	108	73	..	Motorola	..
Marquette, Kan.—Pueblo, Colo.	392.0	..	..	10	Motorola	..
Jefferson City, Mo.—Kansas City, Mo.	157.0	..	..	6	Motorola	..
St. Louis, Mo.	..	..	..	1	Motorola	..
Dupo, Ill.	..	..	..	1	Motorola	..
GCL System	1,720.0	8	17	3	Motorola	..
IGN System	1,100.0	6	12	2	Motorola	..
NP						
Yakima, Wash.—Auburn, Wash.	149.0	4	..	1	Bendix	..
Duluth, Minn.—Ironton, Minn.	104.0	..	17	..	Motorola	5
Livingston, Mont.—Missoula, Mont.	239.0	..	20	..	Bendix	..
PRR						
Harrisburg, Pa.—Chicago, Ill.	713.1	165*	..	..	Union	..
Harrisburg, Pa.—St. Louis, Mo.	856.0					
Erie, Pa.—Union City, Pa.	25.4	..	..	1*	Union	..
Keating, Pa.—Emporium, Pa.	32.8	..	..	1*	Union	..
Clarendon, Pa.—Ridgway, Pa.	45.3	..	..	1*	Union	..
Lawrence Jct., Pa.—Thornton Jct., Pa.	68.6	2*	..	1*	Union	..
Indianapolis, Ind.—Greenville, Ill.	183.6	..	..	3*	Union	..
Columbus, Ohio—Logansport, Ind.	197.7	..	..	4*	Union	..
Columbus, Ohio—Indianapolis, Ind.	187.8	..	..	4*	Union	..
Chicago, Ill.—Logansport, Ind.	101.0	..	..	2*	Union	..
Chicago, Ill.—Crestline, Ohio.	265.0	..	..	6*	Union	..
Pittsburgh, Pa.—Lockport, Pa.	82.0	..	..	1*	Union	..
StL-SF System	4,600.0	1	1	..	G. R. S.	..
		9	9	..	Bendix	..
SOU						
Alexandria, Va.—Atlanta, Ga.	629.3	24	24	..	Motorola	48
Charlotte, N.C.—Jacksonville, Fla.	412.4	2	2	..	Motorola	4
SP						
Sacramento, Cal.—Sparks, Nev.	155.7	7	11‡	4	.....	..
SP&S						
Portland, Ore.—Spokane, Wash.	379.5	20	24	..	Bendix	..
Wishram, Wash.—Bend, Ore.	151.5	..	..	..	Hallicrafters	30
T&P						
Texarkana, Tex.—El Paso, Tex.	863.0	37	19	1	Bendix	..
New Orleans, La.—Marshall, Tex.	370.0	16	6	..	Bendix	..
Totals		664	383	80		348

* Inductive train communication.
† One signal maintenance truck, one freight car inspector's jeep, one supervisory automobile
‡ Snowplows

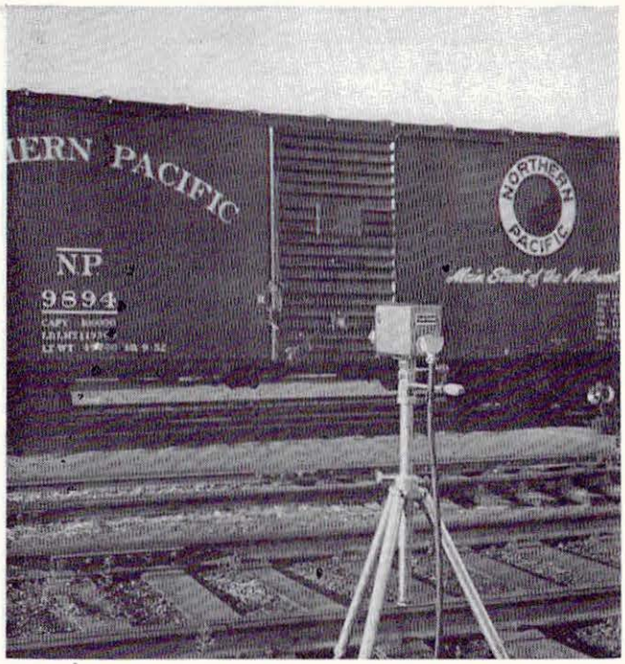
YARD RADIO COMMUNICATIONS INSTALLED IN 1952

Railroad and Location	No. of Locomotives Equipped	No. of Fixed Stations	Manufacturer	No. of Walkie-Talkie Sets
AT&SF				
Shopton, Iowa	4	1	Bendix	..
Brownwood, Tex.	2	1	Bendix	..
Sweetwater, Tex.	2	1	Bendix	..
Los Angeles, Cal.	..	1	Bendix	4
El Segundo, Cal.	..	1	Bendix	..
Gallup, N.M.	..	1	Bendix	..
ACL				
Atlanta, Ga.	3	1	Bendix	..
Birmingham, Ala.	3	1	Bendix	..
Florence, S.C.	2	1	Bendix	..
Jacksonville, Fla.	12	2	Bendix	..
Lakeland, Fla.	5	1	Bendix	..
Tampa, Fla.	12	2	Bendix	..
Waycross, Ga.	7	2	Bendix	..
Wilmington, N.C.	4	1	Bendix	..
Sumter, N.C.	1	1	Bendix	..
Columbia, S.C.	1	1	Bendix	..
C&O				
Russell, Ky.	2	2	Westinghouse	..
Chicago, Ill.	1	1	Bendix	..
PM District				
Muskegon, Mich.	6	1	Bendix	..
CGW				
Oelwein, Iowa	..	1	Ry. R. Tel.	..
			Motorola	2
CMStP&P				
Milwaukee, Wis.	3	1	Bendix	..
CRI&P				
Des Moines, Iowa	7	1	Motorola	..
Biddle, Ark.	4	2	Motorola	..
Eldon, Mo.	..	1	Motorola	..
Herington, Kan.	..	1	Motorola	..
Pratt, Kan.	..	1	Motorola	..
Greensburg, Kan.	..	1	Motorola	..
Bucklin, Kan.	..	1	Motorola	..
Mineola, Kan.	..	1	Motorola	..
Meade, Kan.	..	1	Motorola	..
Liberal, Kan.	..	1	Motorola	..
Guymon, Okla.	..	1	Motorola	..
Goodland, Kan.	..	1	Raytheon	..
Burlington, Colo.	..	1	Raytheon	..
Kansas City, Kan.	1	..	Motorola	..
Clinchfield				
Kingsport, Tenn.	4	1	Motorola	..
Johnson City, Tenn.	2	1	Motorola	..
C&S				
Denver, Colo.	8	1	Westinghouse	..
FW&D				
Fort Worth, Tex.	3	1	Westinghouse	..
DT&I				
Wyandotte, Mich.	..	1	Motorola	..
Dearborn, Mich.	..	1	Motorola	..
Erie				
Buffalo, N.Y.	14	1	Farnsworth	..
Ferrona, Pa.	5	1	Farnsworth	..
Youngstown, Ohio	25	1	Farnsworth	..
New York, N.Y.	1*	..	Westinghouse	..
GM&O				
Tuscaloosa, Ala.	3	1	Motorola	..
L&N				
Louisville, Ky.	7	1	Bendix	..
Birmingham, Ala.	5	1	Motorola	..
M-K-T				
Houston, Tex.	4	1	Bendix	..
NYC&StL				
Cleveland, Ohio	5	2	Farnsworth	..
NYNH&H				
Providence, R. I.	8	1	G. R. S.	..
New Haven, Conn.	11	3	G. R. S.	..
NP				
Seattle, Wash.	2	..	Bendix	..
Duluth, Minn.	20	2	Bendix	..
PRR				
Harrisburg, Pa.	2	..	Western Elec.	..
StL-SF				
Springfield, Mo.	..	1	G. R. S.	10
St. Louis, Mo.	10	4	Bendix	9
Memphis, Tenn.	14	1	Bendix	..
Oklahoma City, Okla.	2	1	Westinghouse	..
SAL				
Birmingham, Ala.	4	1	Motorola	..
Miami, Fla.	1	..	Bendix	..
Savannah, Ga.	..	1	Bendix	..
			Motorola	3
Jacksonville, Fla.	..	1	Comco	..
SOU				
Charlotte, N.C.	2	..	G. R. S.	6
		2	Motorola	..
AGS				
Birmingham, Ala.	17	3	Westinghouse	36
NO&NE				
New Orleans, La.	2	..	G. R. S.	..
SP				
Mojave, Cal.	..	1	.....	..
Roseville, Cal.	10	5	.....	..
Salinas, Cal.	6	1	.....	..
West Oakland, Cal.	..	1	.....	9
Tucson, Ariz.	..	1	.....	..
Yuma, Ariz.	..	1	.....	..
Eugene, Ore.	..	1	.....	6
El Paso, Tex.	5	..	.....	..
Union				
Clairton, Pa.	3	..	Westinghouse	..
UP				
North Platte, Neb.	2	..	Motorola	..
Cheyenne, Wyo.	..	1	Motorola	6
Green River, Wyo.	..	1	Motorola	2
Kansas City, Mo.	6	1	Motorola	4
Denver, Colo.	..	1	Motorola	3
Salt Lake City, Utah	8	..	Motorola	..
Las Vegas, Nev.	2	..	Motorola	..
Los Angeles, Cal.	1	..	Motorola	..
Pocatello, Idaho	2	..	Motorola	..
WP				
San Francisco, Cal.	3	1	Bendix	..
Oakland, Cal.	4	1	Bendix	..
San Jose, Cal.	1	1	Bendix	..
Stockton, Cal.	3	2	Bendix	..
			Doolittle	3
Sacramento, Cal.	3	1	Bendix	..
Oroville, Cal.	2	1	Bendix	..
Portola, Cal.	2	1	Bendix	..
Elko, Nev.	2	1	Bendix	..
Totals	327	99		103

* One tugboat.

NEW MILEAGE OF TELEPHONE AND TELEGRAPH CIRCUITS INSTALLED IN 1952

Railroad	New Mileage of Long-Distance Telephone Circuits		New Mileage of Telegraph Circuits		New Mileage of Printing-Telegraph Circuits	
	Wire	Carrier	Wire	Carrier	Wire	Carrier
AT&SF	1,190	2,713	...	729	...	6,950
ACL	...	462	...	...	...	794
B&O	...	1,850	...	...	...	2,810
B&LE	...	129	...	...	...	...
CNR	2,628	2,923	...	105,503	959	6,335
CPR	375	12,444	56	6,492	26	34,139
CofG	...	...	...	382	...	...
C&O	...	356	...	...	...	...
C&EI	...	111	...	...	...	...
CB&Q	116	530	...	...	...	475
CGW	...	1,000	...	...	...	1,000
CMStP&P	...	856	...	...	...	330
CRI&P	...	221	...	...	...	...
Clinchfield	...	...	...	...	...	277
C&S	...	...	...	...	94	...
FW&D	...	220	...	...	141	...
DL&W	...	57	...	...	...	...
DT&I	42	...	...	...	...	...
DM&IR	...	421	...	...	...	...
EJ&E	...	100	...	...	4	...
Erie	...	332	...	...	2	...
GM&O	48	...	...	...	...	...
IC	32	145	...	...	...	...
L&N	...	191	...	...	491	...
M-K-T	...	387	...	...	...	...
MP	...	287	...	...	...	...
GCL	...	557	...	...	...	136
IGN	...	232	...	...	...	...
NYC	411	...	...	...	...	151
B&A	...	244	...	...	...	...
CCC&StL	351	...	...	...	...	468
MC	...	...	...	...	97	...
NYC&StL	...	135	...	...	936	...
NYNH&H	...	...	...	...	...	197
N&W	...	136	...	...	...	374
NP	...	...	...	...	...	2,861
PRR	...	929	...	...	...	...
Reading	...	...	...	...	80	202
RF&P	...	220	...	...	...	220
StL-SF	...	2,142	...	...	...	890
SAL	513	122	...	...	180	...
SOU	343	512	...	...	...	1,056
GS&F	...	254	...	...	...	262
NO&NE	...	218	...	...	...	...
NOT	...	16	...	...	...	...
StJRT	...	8	...	...	...	...
SP	...	8,440	...	...	...	26,431
T&NO	...	302	...	...	...	856
SP&S	...	142	...	...	...	...
T&P	...	267	...	...	...	646
UP	652	1,738	255	...	...	84,715
Wabash	...	1,735	...	...	...	...
WP	124	...	...	...	...	111
Totals	6,825	44,084	211	113,106	3,010	172,686
	50,909		113,417		175,696	



A television camera "picks off" car numbers in a B&O Chicago yard in a test of its suitability.

Radio communication was installed in 91 yards in 1952 as compared with 48 in the previous year.

INTERCOMMUNICATIONS SYSTEMS INSTALLED IN 1952 IN FREIGHTHOUSES, SHOPS AND OFFICES

Railroad and Location	No. of Control Points	No. of Telephones	No. of Loudspeakers
AT&SF			
Corwith, Ill.	9	..	84
Albuquerque, N.M.	1	..	10
San Francisco, Cal.	4	..	16
B&O			
New York, N.Y.	1	4	6
Philadelphia, Pa.	1	..	6
CNR			
London, Ont.	1	15*	16
Edmonton, Alta.	14	23*	26
CPR			
Montreal, Que.	32	1*	35
Ottawa, Ont.	10	1*	2
Toronto, Ont.	32	1*	31
Quebec, Que.	3	1*	2
Edmonton, Alta.	2	1*	1
Vancouver, B.C.	7	1*	6
London, Ont.	3	1*	2
C of G			
Savannah, Ga.	3	..	3
Chattanooga, Tenn.	2	..	2
Macon, Ga.	2	..	3
C of NJ			
Allentown, Pa.	5	..	14
New York, N.Y.	1	..	2
C&O			
PM District			
Grand Rapids, Mich.	1	..	12
C&NW			
Proviso, Ill.	1	..	33
CB&Q			
Chicago, Ill.	..	..	5†
CRI&P			
Hamilton Park, Ill.	2	6	..
Chicago, Ill.	5	12	4
Kansas City, Kan.	4	..	2
Cedar Rapids, Iowa	2	..	5
Rock Island, Ill.	1	..	4
Ottawa, Ill.	1	..	4
Peoria, Ill.	1	..	4
Clinchfield			
Spartanburg, S.C.	1	8	4
EJ&E			
Gary, Ind.	5	..	10
Erie			
Jersey City, N.J.	9	4	12
New York, N.Y.	1	..	3
Corning, N.Y.	1	..	4
Jamestown, N.Y.	4	8	10
Susquehanna, Pa.	4	3	18
Corry, Pa.	1	..	2
GN			
St. Cloud, Minn.	2	..	31
GM&O			
East St. Louis, Ill.	1	20	6
IC			
New Orleans, La.	2	..	6
Jackson, Miss.	2	..	6
Memphis, Tenn.	5	..	27
LV			
Manchester, N.Y.	6	15	20
MTA			
Boston, Mass.	7	7	..
M-K-T			
St. Louis, Mo.	15	50	25
Kansas City, Kan.	..	3	..
Houston, Tex.	..	10	..
NYC			
Chicago, Ill.	2	..	4
B&A			
Springfield, Mass.	10	..	20
NYNH&H			
New Haven, Conn.	1	55	..
Harlem River, N Y.	1	..	5
N&W			
Crewe, Va.	12	..	12
Roanoke, Va.	7	..	7
NP			
Seattle, Wash.	3	19	6
PRR			
New York, N.Y.	1	..	20
Philadelphia, Pa.	8	8	8
Mingo Jct., Ohio	1	..	3
StL-SF			
St. Louis, Mo.	12	55	24
Joplin, Mo.	1	6	4
SAL			
Hamlet, N.C.	2	..	25
Tampa, Fla.	9	..	12
Soo Line			
Schiller Park, Ill.	1	..	25
SOU			
Richmond, Va.	2	..	5
Atlanta, Ga.	3	..	..
AGS			
Birmingham, Ala.	1	..	4
Union			
North Versailles Twp., Pa.	..	4	1
Wilkins Twp., Pa.	..	1	1
Duquesne, Pa.	..	1	..
East Pittsburgh, Pa.	..	3	..
North Braddock, Pa.	..	1	..
West Mifflin, Pa.	..	2	..
UP			
Council Bluffs, Iowa	1	20	9
Virginian			
Norfolk, Va.	3	..	8
Princeton, W.Va.	..	13	..
Wabash			
Decatur, Ill.	7	..	7
Totals	305	338	779

* Two-way speakers.
† Additions to present systems.

Centralized checking using two-way loudspeaker communications was installed in several l.c.l. freighthouses.

stations and 327 locomotives, as well as 103 portable walkie-talkie sets. For example, in a yard at Birmingham, the Southern placed in service 36 walkie-talkie sets, and radio in 3 fixed stations and 17 locomotives. In the Springfield, Mo., terminal area, the St. Louis-San Francisco installed 1 fixed station to work with 10 walkie-talkie sets. Even if there is only one switch engine working in a comparatively small terminal area, some roads find it worthwhile to install a fixed station and equip the one locomotive, because so much time is saved.

New Uses for Radio

In 1952, the railroads found additional uses for radio. For example, on the Rock Island radio was installed between field headquarters and construction forces during the building of the 34-mile section of new single-track main line between Atlantic, Iowa, and Council Bluffs.

The Chicago South Shore & South Bend installed radio equipment on trucks used by the signal maintainer and the freight-car inspector, and in the automobile used by the trainmaster, so that calls can be made in either direction between the dispatcher's office at South Bend and trucks anywhere on the railroad. This facility is incorporated in the overall system of radio train communication, previously in service. Several roads, such as the Atlantic Coast Line, when installing yard and terminal radio, provide two-way communication not only between locomotives and the yard office, but also in the automobiles used by terminal trainmasters, so they can communicate at will with the office or with the locomotive crews.

Other roads are proposing the use of two-way radio to expedite operations of roadway equipment, such as ballast cleaners, on-track power tampers and rail-laying cranes. Another proposal is to provide two-way radio train communication between rail-detector cars and rail-laying crews following these cars, as well as the flagmen.

As a time-saver in yards, several railroads, during 1952, made extensive installations of talk-back loudspeakers. In these systems, the yardmaster at a central location can communicate with the foreman of yard crews as they proceed with their work. Numerous installations of this character, completed in 1952, included a total of 2,677 loudspeakers and control machines, as compared with 1,101 in 1951. An installation of this nature in a yard on the Atlantic Coast Line was the subject of an article in *Railway Age* October 20, 1952.

Last year many railroads reduced operating expenses in l.c.l. freighthouses by using centralized checking. With the new systems, the checkers with waybills remain in an office; two-way talk-back loudspeakers on each checker's desk and in the cars are used to talk back and forth. Thus, one checker can work with two or three crews, and do more efficient work than previously. The Milwaukee installed such a loudspeaker system in its l.c.l. freighthouse in Chicago (*Railway Age*, March 3, 1952). The Santa Fe's similar centralized checking system for freight-handling crews, installed in Corwith freighthouse, was described in the December 1, 1952, issue.

Other railroads utilize centralized checking, but prefer portable telephones to talk-back loudspeakers in the cars (*Railway Age*, August 4, 1952).

In 1952, television was first tested as an aid in railroad operations. In a Baltimore & Ohio yard in Chicago, RCA-Victor made a demonstration installation, including television cameras in the yard connected by cables to TV receivers in the yard office. In one test, a camera at the yard entrance "picked off" car numbers which the yard clerk viewed on a receiver in his office. Cameras in car and locomotive inspection pits were connected to receiving sets in offices. Another TV camera, mounted atop an 80-ft. tower, was connected to a receiver in the yardmaster's office. He could move the camera to "sweep" the yard and thus obtain an "aerial" view of operations. These demonstrations were reported and illustrated in our issues of September 29 and October 18, 1952.

The New Haven cooperated with DuMont in similar tests in a yard near New Haven. Other roads, including the Chicago & North Western, have conducted tests using RCA-Victor television equipment.

In October the Santa Fe placed in operation a microwave system between Galveston, Tex., and Beaumont. This 68-mile span carries railroad telephone and telegraph communications which previously were handled on line wires on a 343-mile circuitous route. The microwave system operates over farm areas, swamplands, part of Galveston bay and an arm of the Gulf of Mexico. Eight voice channels with six channels of telegraph are transmitted between Galveston and Beaumont via three repeater stations. The system can be expanded to carry 24 telegraph channels as well as the voice channels.

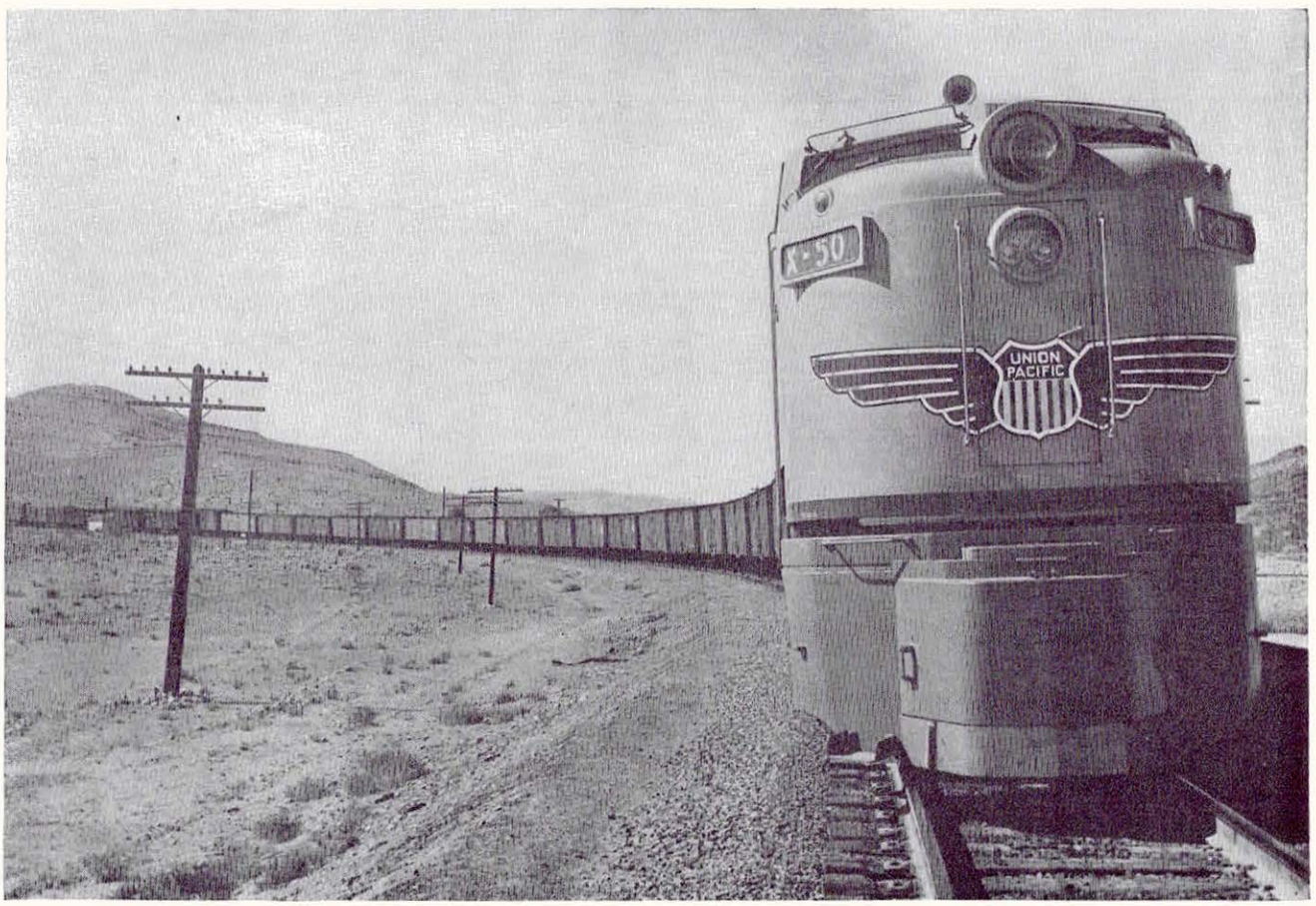
This is the second microwave project to be installed on the railroads; the first was on the Rock Island, in 1950, between Goodland, Kan., and Norton, 106 miles. During 1952, this Rock Island installation was the "proving ground" for further developments, including larger reflectors and more power, which resulted in better operating stability and less drift of the microwave beam. This microwave installation is now handling telephone train dispatching and Teletype circuits in 24-hour, year-round service. If sleet breaks the line wires, the microwave system instantly takes over the pole line circuits.

Transistors were first used in railroad communications on the Baltimore & Ohio in 1952. A transistor is a small electrical device, about the size of a match tip, which performs many of the functions of a vacuum tube. The B&O telephone with transistors had better transmission qualities and required less power.

YARD LOUDSPEAKER SYSTEMS INSTALLED IN 1952

Railroad and Location	No. of Control Points	No. of Two-Way Speakers	No. of Paging Speakers
AT&SF			
Corwith, Ill.	1	10	..
B&O			
Pittsburgh, Pa.	1	23	30
B&LE			
Conneaut, Ohio	1	..	3
Albion, Pa.	1	..	4
C of NJ			
Allentown, Pa.	2	14	14
Elizabethport, N.J.	2	12	6
C&O			
PM District			
Grand Rapids, Mich.	1	46	15
Midland, Mich.	1	21	..
C&NW			
Proviso, Ill.	2	..	5
CB&Q			
Chicago, Ill.	..	..	2*
CMStP&P			
Milwaukee, Wis.	3	51	48
Aberdeen, S.D.	1	5	11
Clinchfield			
Dante, Va.	1	..	2
Erwin, Tenn.	1	..	2
D&RGW			
Ogden, Utah	1	5	12
DSS&A			
Marquette, Mich.	1	8	5
EJ&E			
Gary, Ind.	4	56	22
FEC			
Daytona Beach, Fla.	1	2	9
Buena Vista, Fla.	1	3	4
GN			
Great Falls, Mont.	3	..	18
Kelly Lake, Minn.	8	..	12
GM&O			
Bloomington, Ill.	1	33	9
IC			
Chicago, Ill.	2	40	45
LV			
Jersey City, N.J.	1	15	8
L&N			
Bowling Green, Ky.	1	..	2
NC&StL			
Atlanta, Ga.	1	31	12
NYC			
Minoa, N.Y.	1	..	27
CCC&StL			
East St. Louis, Ill.	15	..	45
IHB			
Argo, Ill.	5	..	14
NYC&StL			
Homestead, Ohio	1	9	..
NYNH&H			
E. Bridgeport, Conn.	8	..	10
Providence, R. I.	3	..	5
N&W			
Norfolk, Va.	9	..	12
NP			
Livingston, Mont.	1	5	7
Glendive, Mont.	1	6	8
PRR			
Sodus Point, N.Y.	1	4	..
Philadelphia, Pa.	1	..	8
Reading			
Rutherford, Pa.	5	5	31
St. Clair Scale, Pa.	1	..	3
StL-SF			
St. Louis, Mo.	1	53	8
Kansas City, Mo.	7	..	5
Amory, Miss.	1	..	4
Soo Line			
North Fond du Lac, Wis.	1	14	6
SOU			
Greenville, S.C.	1	55	15
Spartanburg, S.C.	1	55	15
Pomona, N.C.	1	64	6
Sheffield, Ala.	1	17	..
AGS			
Birmingham, Ala.	5	425	69
CNO&TP			
Cincinnati, Ohio	1	88	..
MT			
Meridian, Miss.	1	..	7
NO&NE			
New Orleans, La.	1	74	12
SP			
Roseville, Cal.	3	130	20
Tracy, Cal.	1	59	..
Fresno, Cal.	1	34	6
Watsonville Jct., Cal.	1	56	..
SP&S			
Portland, Ore.	1	14	8
Vancouver, Wash.	..	10*	..
Wishram, Wash.	..	10*	2*
UP			
Council Bluffs, Ia.	1	73	9
Denver, Colo.	1	54	7
Los Angeles, Cal.	1	61	6
Green River, Wyo.	1	47	5
Virginian			
Sewalls Point, Va.	31	6	24
Wabash			
Decatur, Ill.	2	103	67
Totals	161	1,906	771

* Additions to present systems.



Production of hopper cars like these—built by the American Car & Foundry Co. for the Grand Trunk Western—was curtailed by the strike in the steel industry which began last June 2.

37,911 Freight-Train Cars Ordered in 1952

By C. B. PECK
Mechanical Editor
and FRED C. MILES
Associate Editor

Orders for 37,911 freight-train cars for domestic service were placed in this country during 1952, according to the American Railway Car Institute and the Association of American Railroads. Cars ordered in this country for export totaled 4,227. Substantially all freight-train cars ordered in the United States last year, as well as cars ordered in Canada from Canadian builders, are listed by purchaser in the accompanying detailed tabulation. *Railway Age* is unable, because of security restrictions, to tabulate freight-train cars ordered by the Transportation Corps for service here or abroad.

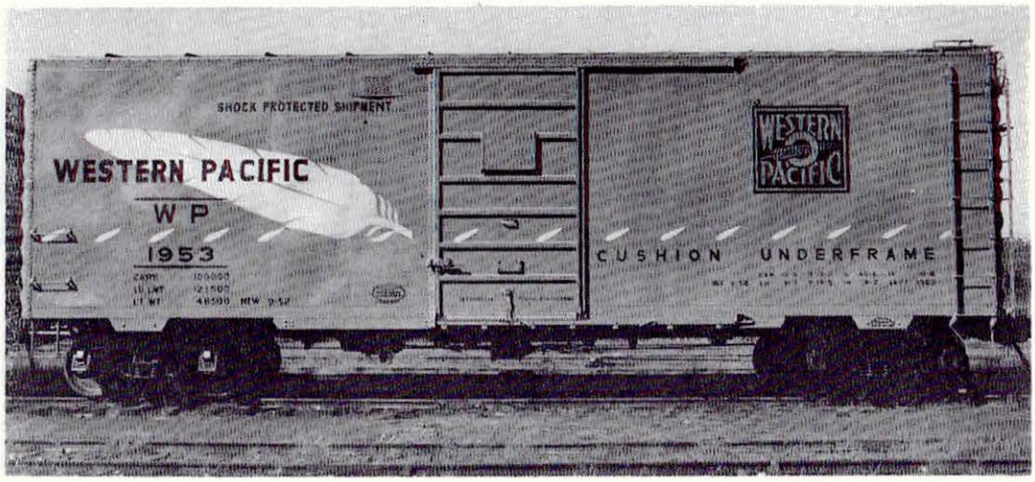
The detailed tabulation of orders for domestic service was compiled by *Railway Age* from information received from purchasers and checked and amplified with data received from car builders through the cooperation and assistance of the A.R.C.I. In two smaller tables there are summaries and analyses of freight-train-car orders and deliveries from 1935 through 1952.

Immediately after the beginning of the Korean hostilities in the summer of 1950 the American railroads, through the Association of American Railroads, adopted a program for the purchase of freight cars the ultimate objective of which was to increase the ownership of Class I railroads to 1,850,000. With a production of 10,000 new cars a month during 1951 and subsequently, and normal rates of retirement, this goal could probably have been attained by mid-1953. This program reflected the conviction of their managements that American railroads constitute an essential industry for defense as well as for the effective functioning of the civilian economy.

At the outset it appeared that the government agencies responsible for the distribution of materials in short supply were in agreement with this view.

By 1951, however, the feelings for this view of the Defense Production Administration and the National Production Authority were rapidly cooling off. Allocations decreased progressively through the last three quarters of that year in spite of the continuous effort of James K. Knudson, defense transport administrator, to get steel enough to assure a production of 10,000 new freight cars a month.

For the first three quarters of 1952 the Defense Transport Administration asked for steel for 108,000 cars, but allocations announced early in the year were for a



PS-1 BOX CAR built and styled for the Western Pacific by Pullman-Standard.

rate of 9,000 a month during the first quarter, 6,600 a month during the second quarter, and 5,600 a month during the third quarter. Even at the first-quarter rate Mr. Knudson expressed the opinion that it would take the better part of three years to attain a railway car ownership adequate for a reasonable performance in peak mobilization.

The allocations were altered later to 23,000, 21,500 and 22,774 for the three quarters, successively—a total of 67,274. Actually, however, deliveries amounted to 8,642 in January and declined to an average for the first ten months of a few less than 6,400 a month. For the three quarters, deliveries amounted to a few more than 58,500 cars. The steel strike which began on June 2 made any definite advance allocations for the fourth quarter impossible. The loss of freight-car production caused by the strike was estimated by the N.P.A. as 30,000 cars.

Because of the low average of freight-car production the net increase in Class I railway ownership was less than 3,400 cars during the first ten months of 1952. From January to June, inclusive, there was an increase in ownership of 12,349 cars of all types, but from July to October, inclusive, there was a reduction of 8,982.

Two factors have combined to reduce whatever sense of responsibility the material-allocating agencies of the government may have had as to building up the supply of railway equipment. First was the effect of the reduction of car loadings during each of the first three quarters of the year and during the first nine weeks of the fourth quarter, as compared with the same periods of 1951.

Loadings during the first quarter were off 1.7 per cent; during the second quarter, 11.7 per cent; during the third quarter, 9 per cent; and during the following nine weeks, 2.2 per cent—a reduction for the 48 weeks of 6.6 per cent. As pointed out in the report of the D.T.A. for the year ended October 1, 1952, the government allocating authorities have taken the short-range view that, because of these reductions, it is unnecessary to allocate as much material to the freight-car program as formerly.

Freight-Train Cars Delivered—Domestic and Export 1935-1952

Year	Car-builders	Railroad and Private Line Shops	Total	U. S. Export
1952	53,582	24,208	77,790	1,565
1951	67,744	28,199	95,943	50
1950	24,443	19,548	43,991	218
1949	62,955	29,607	92,562	2,610
1948	83,196	29,444	112,640	2,245
1947	52,990	15,532	68,522	27,721
1946	31,885	10,070	41,955	18,020
1945	31,011	12,853	43,864	10,658
1944	27,953	15,050	43,003	38,759
1943	24,616	7,220	31,836	43,117
1942	47,429	15,444	62,873	8,529
1941	63,396	15,227	80,623	2,386
1940	45,316	17,025	62,341	1,734
1939	19,491	5,641	25,132	381
1938	9,990	6,480	16,470	611
1937	61,929	15,569	77,498	1,321
1936	30,969	15,643	46,612	523
1935	5,965	1,550	7,515	1,263

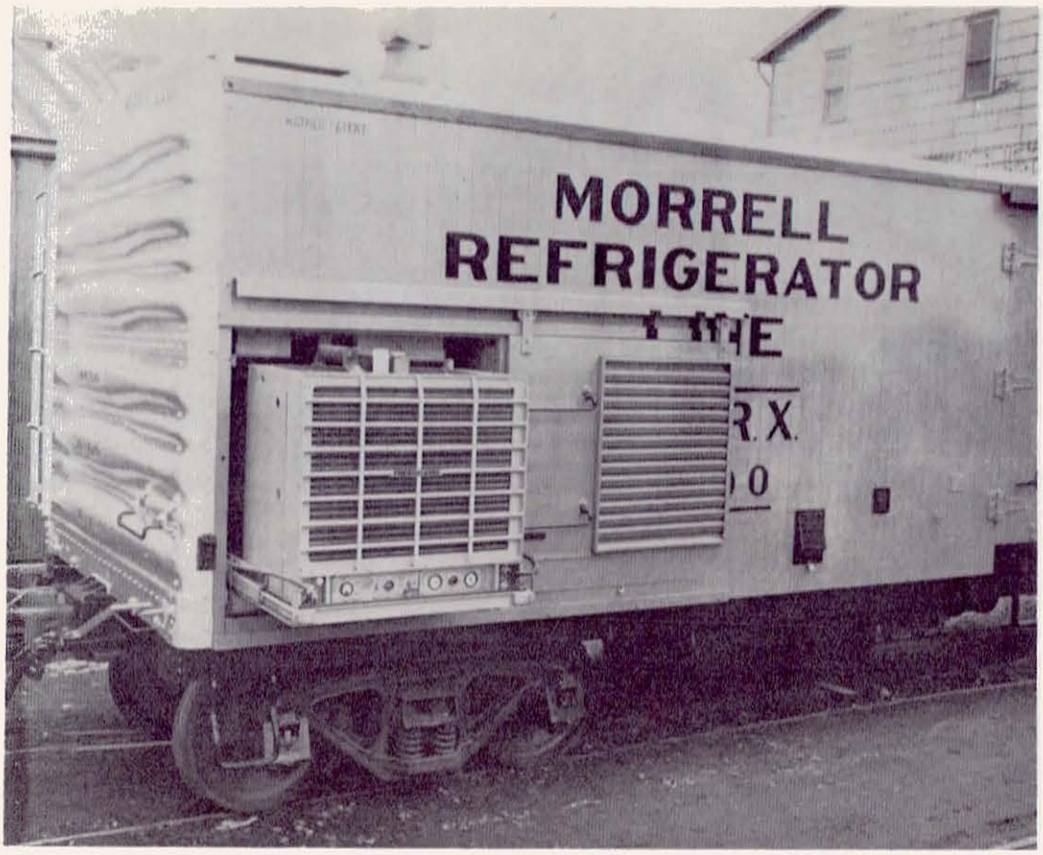
Source: American Railway Car Institute. 1952 subject to revision.

Number and Classification of Freight-Train Cars Ordered for Domestic Use

(Carbuilder and Railroad Shops)

Year	Box	Flat	Stock	Gondola	Hopper	Tank	Refrig.	Others	Non. Rev.	Total
1952	6,726	2,404	0	8,672	10,897	4,579	2,989	1,508	136	37,911
1951	28,977	2,304	1,000	17,383	32,637	6,894	3,580	601	498	93,874
1950	68,661	3,937	500	33,094	8,651	7,505	1,639	282	282	155,692
1949	2,852	60	0	244	1,131	834	1,050	5	47	6,223
1948	17,140	4,139	500	18,498	40,193	4,229	6,510	881	685	92,775
1947	38,490	636	150	14,877	52,036	6,851	6,200	586	377	120,163
1946	30,500	1,173	0	4,577	15,511	4,825	10,253	153	201	67,193
1945	15,440	1,241	0	5,727	12,960	915	1,085	174	320	37,862
1944	31,066	823	300	6,758	12,674	972	1,465	371	52	54,481
1943	10,027	2,212	0	5,312	18,400	556	50	153	320	37,030
1942	2,351	2,300	0	9,711	10,197	2,716	0	1,285	0	28,560
1941	55,939	3,459	400	15,814	23,213	2,800	2,370	1,614	1,288	106,897
1940	35,530	885	350	9,654	14,446	1,671	785	1,965	542	65,828
1939	20,140	976	100	6,419	21,923	2,373	675	1,127	182	53,915
1938	7,912	931	568	4,279	2,017	230	0	299	134	16,370
1937	20,564	1,365	500	10,120	12,817	692	1,770	287	1,827	49,942
1936	21,866	1,224	453	8,782	22,271	5,745	7,495	100	1,812	69,748
1935	8,925	75	50	2,755	5,970	313	600	32	29	18,749

Source: American Railway Car Institute. 1952 subject to revision.



Thermo King self-contained mechanical refrigeration unit in a car owned by Mather Stock Car Co. and operated by John Morrell & Co. Unit is shown on mounting base, rolled out into position for maintenance operations.

Railroad Orders — For Service in the United States

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Apalachicola Northern	50	Pulpwood	100,000	45	9½	Steel	.....	June	1953	Pullman-Standard
Atchison, Topeka & Santa Fe	500	Hopper	140,000	40	6	Steel	.....	July	1953	R. R. Shops
	500	Gondola	140,000	40	6	Steel	.....	June	1954	R. R. Shops
	250	Cov. Hopper	140,000	40	6	Steel	.....	June	1954	R. R. Shops
	2	Flat	250,000	40	6	Steel	.....	July	1953	R. R. Shops
Atlantic Coast Line	800	Pulpwood	100,000	45	9	Steel	49,000	November	3rd qtr. '53	Bethlehem Steel
	600	Cov. Hopper	140,000	29	3	Steel	53,000	November	1953	Amer. Car & Fdy.
	600	Cov. Hopper	140,000	29	3	Steel	53,000	November	1953	Pullman-Standard
	24	Air Dump	.....	..	..	.....	.....	1952	....	Baldwin-Lima-Ham.
Baltimore & Ohio	12	Caboose	80,000	23	4	Steel	59,000	January	1953	R. R. Shops
	1	Depressed Flat	250,000	57	9	Cast Steel Frame-Wood Floor	125,000	July	1953	R. R. Shops
	1	Depressed Flat	172,000	41	3	Cast Steel Frame-Wood Floor	70,000	July	1953	R. R. Shops
	1	Flat	250,000	53	0	Cast Steel Frame-Wood Floor	115,000	July	1953	R. R. Shops
Bangor & Aroostook	357	Refrig.	80,000	40	0	Steel Frame	56,000	June	1st half '53	Pacific Car & Fdy.
	150	Insulated	80,000	40	0	Steel Frame	52,600	June	1st half '53	Pacific Car & Fdy.
Belt of Chicago	10	Caboose	.....	19	6	Steel	44,000	November	1953	Intl. Ry. Car
Bessemer & Lake Erie	200	Ore	140,000	20	9	Steel	52,600	October	Aug. '53	Greenville Steel Car
Central of Georgia	50	Hopper	140,000	29	3	Steel	51,000	July	Apr. '53	Pullman-Standard
Charleston & Western Carolina	15	Flat	100,000	41	6	Steel Underframe	39,000	March	July	R. R. Shops
Chesapeake & Ohio	300	Gondola	100,000	40	6	Steel	42,000	July	July '53	Amer. Car & Fdy.
	400	Gondola	140,000	52	6	Steel	54,500	July	Aug. '53	Amer. Car & Fdy.
	250	Cov. Hopper	140,000	29	3	Steel	52,900	May	Feb. '53	Pullman-Standard
Chicago & North Western	400	Ore	140,000	20	6	Steel	42,200	1952	Apr. '53	Bethlehem Steel
	17	Cov. Hopper	140,000	29	3	Steel	50,900	May	Feb. '53	Pullman-Standard
	4	Box	100,000	40	6	Steel	44,700	May-June	1952	Pullman-Standard
	1	Cov. Hopper	140,000	29	3	Steel	.....	February	1953	Pullman-Standard
Chicago, Burlington & Quincy	1	Flat	250,000	.....		.....	.....	1952	....	R. R. Shops
Chicago Heights Terminal Transfer	25	Flat	140,000	53	6	Steel Frame	.....	1952	Apr. '53	R. R. Shops
	25	Box	100,000	50	6	Steel Frame	.....	November	2nd qtr. '53	Amer. Car & Fdy.
Chicago, Indianapolis & Louisville	9	Caboose	.....	30	0	Steel	50,400	May	1952–53	Intl. Ry. Car
	1	Box	100,000	50	6	Steel	.....	October	1953	Pullman-Standard
	60	Cov. Hopper	140,000	29	3	Steel	.....	May	1953	Pullman-Standard
Chicago, Milwaukee, St. Paul & Pacific	100	Skeleton log Flat	.....	.....		.....	.....	1952	.....	R. R. Shops
Chicago, Rock Island & Pacific	200	Gondola	140,000	65	6	Steel	64,200	September	2nd qtr. '53	Pullman-Standard
Chicago, St. Paul, Minneapolis & Omaha	11	Box	100,000	40	6	Steel	43,850	May	1953	Pullman-Standard
Colorado & Southern	70	Gondola	140,000	52	6	Steel	60,000	June	4th qtr. '53	R. R. Shops
	30	Gondola	140,000	65	6	Steel	63,900	June	2nd qtr. '53	R. R. Shops
	20	Cov. Hopper	140,000	29	3	Steel	52,600	June	4th qtr. '53	R. R. Shops
Colorado & Wyoming	24	Gondola	140,000	34	8	Steel	52,500	September	July '53	Greenville Steel Car
Delaware, Lackawanna & Western	100	Cov. Hopper	140,000	26	3	.....	49,900	March	.....	Amer. Car & Fdy.
Delaware & Hudson	1	Flat	492,000	.....		.....	.....	1952	.....	R. R. Shops
Detroit, Toledo & Ironton	300	Box	100,000	50	6	Steel	52,000	July	1st qtr. '53	Pullman-Standard

The other factor is the reduction in orders for freight cars placed by the railroads during the year. This is reflected in the reduction in the backlog of unfilled orders in spite of the sharp reduction in the number of cars delivered. As a matter of fact, the dearth of orders is considered by many to have been the direct result of

Railroad Orders—For Service in the United States (cont.)

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Duluth, Missabe & Iron Range	500	Ore	140,000	19	10	Steel	.....	September	1953	Pullman-Standard
Florida East Coast	100	Gondola	100,000	41	6	Steel	.....	January	1953	Pullman-Standard
Ft. Dodge, Des Moines & Southern	200	Box	100,000	40	6	Steel Frame	45,800	February	July	Pullman-Standard
Ft. Worth & Denver	250	Box	100,000	40	6	Steel	43,300	June	4th qtr. '53	R. R. Shops
Grand Trunk Western	6	Caboose	.....	29	5	Steel Frame	.....	February	October	Intl. Ry. Car
	50	Cov. Hopper	140,000	29	3	Steel	.....	July	June '53	Amer. Car & Fdy.
	100	Gondola	140,000	50	6	Steel	.....	July	June '53	General American
Great Northern	1,000	Box	.....	..	..	Steel	.....	1952	.....	R. R. Shops
	100	Cov. Hopper	140,000	29	3	Steel	.....	February	1953	Pullman-Standard
Gulf Coast Lines	262	Box	100,000	40	6	Steel	45,200	September	Jan.-Feb. '53	R. R. Shops
Gulf, Mobile & Ohio	50	Cov. Hopper	140,000	29	3	Steel	50,000	May	Apr. '53	Pullman-Standard
	400	Pulpwood	.....	..	..	.....	.....	1952	.....	R. R. Shops
Illinois Central	30	Cov. Hopper	140,000	29	3	Steel	52,700	September	Mar. '53	Pullman-Standard
	8	Air Dump	30 yd.	..	..	.....	.....	1952	.....	Baldwin-Lima-Ham.
International-Great Northern	500	Box	100,000	..	..	.....	.....	1952	.....	M. P. Shops
Kansas, Oklahoma & Gulf	5	Caboose	.....	..	..	.....	.....	June	September	Intl. Ry. Car
Lehigh & New England	100	Cov. Hopper	.....	..	..	Steel	50,800	November	June '53	Pullman-Standard
Lehigh Valley	100	Cov. Hopper	140,000	29	3	Steel Frame	51,300	September	May '53	Bethlehem Steel
	200	Hopper	110,000	31	0	Steel	40,000	May	Jan. '53	R. R. Shops
	1	Dep. Center Flat	250,000	57	9	.....	124,600	July	Jan. '53	R. R. Shops
Louisiana & North West	2	Caboose	.....	30	0	Steel Frame	60,000	December	Feb. '53	Intl. Ry. Car
Louisville & Nashville	8	Air Dump	30 yds.	..	..	.....	.....	1952	.....	Baldwin-Lima Ham.
Minneapolis, St. Paul & Sault Ste. Marie	1,100	Box	100,000	..	..	.....	.....	1952	.....	R. R. Shops
	100	Hopper	100,000	..	..	.....	.....	1952	.....	R. R. Shops
	100	Gondola	100,000	..	..	.....	.....	1952	.....	R. R. Shops
Missouri-Illinois	100	Cov. Hopper	140,000	39	10	Steel	57,500	October	July '53	M. P. Shops
Missouri-Kansas-Texas	300	Box	100,000	40	6	Steel	46,100	August	Apr.-May '53	Amer. Car & Fdy.
	200	Box	100,000	50	6	Steel	52,000	August	Apr.-May '53	Amer. Car & Fdy.
	1	Dep. Center Flat	250,000	58	4	Steel	100,000	September	December	R. R. Shops
Missouri Pacific	8	Air Dump	140,000	31	10	Steel	63,000	October	Feb. '53	Magor Car
	2	Flat	.....	..	..	.....	.....	1952	.....	R. R. Shops
	400	Cov. Hopper	140,000	39	10	Steel	57,500	August	.....	R. R. Shops
	100	Pulpwood	100,000	38	0	Steel	42,700	July	.....	R. R. Shops
Monessen Southwestern	15	Air Dump	100,000	31	10	Steel	59,000	October	Oct. '53	Magor Car
Nashville, Chattanooga & St. Louis	75	Cov. Hopper	140,000	..	..	Steel	50,000	July	Feb. '53	Pullman-Standard
	400	Hopper	100,000	..	.	Steel	42,000	February	Oct. '53	Pullman-Standard
New York Central	500*	Box	110,000	40	6	Steel	44,940	March	July	Pullman-Standard
	600*	Cov. Hopper	140,000	29	3	Steel	51,600	April	2nd qtr. '53	Pullman-Standard
New York, Chicago & St. Louis	200	Cov. Hopper	140,000	29	3	Steel	50,400	January	May '53	Greenville Steel Car
	1	Caboose	60,000	30	0	Steel Frame	47,700	January	August	R. R. Shops
	24	Caboose	60,000	27	1	Steel Frame	45,300	January	Dec. '53	R. R. Shops
	1	Flat	250,000	53	0	Steel Frame	105,400	July	Apr. '53	R. R. Shops
	1	Flat	250,000	58	4	Steel Frame	125,300	July	Apr. '53	R. R. Shops
New York, New Haven & Hartford	100	Insulated	80,000	40	6	Steel Frame	52,000	August	Apr. '53	Pac. Car & Fdy.
	100	Flat	100,000	40	0	Steel Frame	48,200	November	Feb.-Oct. '53	R. R. Shops
Norfolk & Western	500	Box	100,000	40	6	Steel	45,400	March	Jan.-Mar. '53	Pullman-Standard
	1,000	Gondola	140,000	46	0	Steel	59,500	April	Aug.-Dec. '53	R. R. Shops
	500	Gondola	100,000	46	0	Steel	55,000	April	June-Sept. '53	R. R. Shops
	25	Flat	140,000	49	3	Steel	51,000	April	Apr.-June '53	R. R. Shops
	10	Air Dump	.....	..	..	.....	.....	1952	.....	Baldwin-Lima-Ham.
Northern Pacific	200	Ore	140,000	19	10	Steel	41,300	September	1953	R. R. Shops
Reading	100	Cov. Hopper	140,000	27	4	Steel	54,000	November	Aug. '53	Bethlehem Steel
	2	Flat	.....	..	..	.....	.....	1952	.....	R. R. Shops
St. Louis, Brownsville & Mexico	500	Box	100,000	..	..	.....	.....	1952	.....	M. P. Shops
St. Louis-San Francisco	100	Wood Rack	100,000	37	10	Steel	42,400	March	1952	R. R. Shops
	100	Wood Rack	100,000	37	10	Steel	42,400	October	2nd qtr. '53	R. R. Shops
	500	Hopper	110,000	33	0	Steel	39,700	February	2nd qtr. '53	Pullman-Standard
	1	Flat	250,000	57	9	Steel	124,600	June	2nd qtr. '53	R. R. Shops
St. Louis Southwestern	1	Flat	250,000	57	9	Steel	124,600	July	Feb. '53	R. R. Shops
	75	Gondola	70,000	52	6	Steel	57,600	November	July '53	Bethlehem Steel
Seaboard Air Line	400	Gondola	100,000	..	..	.....	.....	1952	.....	R. R. Shops
Southern	1,500	Gondola	140,000	52	6	Steel	62,500	March	June '53	Pullman-Standard
	1,750	Triple Hopper	140,000	41	8	Steel	55,000	March	Mar. '53	Amer. Car & Fdy.
Southern Pacific	1,400	Box	100,000	40	6	Steel Frame	44,600	April	1953	R. R. Shops
	350	Gondola	100,000	34	6	Steel	37,700	September	1953	R. R. Shops
	450	Gondola	100,000	41	0	Steel	49,900	September	1953	R. R. Shops
	1,000	Flat	140,000	53	6	Steel Frame	58,900	September	1953-54	R. R. Shops
	1	Flat	250,000	58	4	Steel	101,500	September	Mar. '53	R. R. Shops
	2	Flat	250,000	53	0	Steel	124,600	September	1953	R. R. Shops
	1	Flat	400,000	44	0	Steel	105,000	September	Apr. '53	R. R. Shops
	100	Flat	100,000	42	7	Steel	42,700	September	1952-53	R. R. Shops
	100	Gondola	140,000	40	1	Steel Frame	56,300	September	1953	R. R. Shops
Spokane, Portland & Seattle	500	Box	100,000	40	6	Steel	45,000	January	Sept. '53	N. P. Shops
Texas & Pacific	200	Hopper	140,000	40	6	Steel	51,000	1952	1953	R. R. Shops
Texas Mexican	30	Gondola	140,000	52	6	Steel	60,000	August	Apr. '53	Pullman-Standard
	5	Ballast	140,000	36	0	Steel	60,000	August	Apr. '53	Pullman-Standard
Toledo, Peoria & Western	25	Box	100,000	40	6	Welded	.....	September	.....	Amer. Car & Fdy.
	25	Box	100,000	40	6	Steel	.....	September	1953	Pullman-Standard
Union Pacific	500	Gondola	140,000	52	6	Steel	.....	February	1st qtr. '53	R. R. Shops
	100	Gondola	140,000	65	6	Steel	.....	February	3rd qtr. '53	R. R. Shops
	500	Hopper	140,000	40	8	Steel	.....	February	2nd-3rd qtr. '53	R. R. Shops
	500	Automobile	100,000	50	6	Steel	.....	February	1st qtr. '53	R. R. Shops
	500	Box	100,000	40	6	Steel	.....	February	2nd qtr. '53	R. R. Shops
	500	Ore	140,000	26	0	Steel	.....	February	3rd-4th qtr. '53	R. R. Shops
	1	Flat	250,000	57	0	.....	.....	June	1st qtr. '53	R. R. Shops
Virginian	4	Air Dump	100,000	33	0	Steel	63,000	February	Apr. '53	Differential Steel Car
Wabash	1	Dep. Center Flat	250,000	..	.	Steel	.....	March	June	R. R. Shops
	20	Caboose	.....	..	..	Steel	.....	1952	.....	R. R. Shops
Western Maryland	200	Gondola	40,000	52	6	Steel	53,600	September	May '53	Bethlehem Steel
Western Pacific	100	Gondola	140,000	29	4	Steel	43,700	January	July '53	Greenville Steel Car
	100	Ballast	140,000	30	9	Steel	.....	January	1953	Pullman-Standard

*Leased from the Equitable Life Assurance Society.

the lack of production. With some orders still undelivered after more than two years, there is little incentive for railroads to order more cars, even though they want them. Indeed, after such an interval there is a tendency for the cancellation, or at least withdrawal, of orders for possible readjustment if and when some prospect for reasonable deliveries is restored. On the short-term basis this can be interpreted as absolving the allocating authorities from responsibility since the railroads are apparently not supporting the requests for increased allocations.

It is true that car shortages have not been as continuously acute during 1952 as they were during 1950 and 1951. However, there have been periods of sizable shortages in box, flat, gondola and hopper cars at various times during the year, making it evident that the current supply is not adequate to meet normal seasonal demands even with the reduced level of traffic which has prevailed during 1952. A shortage of gondolas following the end of the steel strike delayed the distribution of steel to the car builders and other users alike.

The railways still believe that they have a responsibility to provide for the performance of their part in the maintenance of national security. In November they

Private Car Lines and Other Orders — For Service in the United States

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Allied Chemical & Dye Corp.:										
Barrett Division	8	Tank	10,000g.	40	0	Steel	46,000	October	July '53	General American
	50	Tank	12,500g.	..	..	.....	.....	April	Aug. '53	General American
Nitrogen Division	22	Tank	10,000g.	33	10	Alum.	48,100	January	.....	Amer. Car & Fdy.
	7	Tank	8,000g.	33	4	Alum.	42,500	January	.....	Amer. Car & Fdy.
Solvay Process Division	50	Tank	140,000	37	4	Steel	88,000	January	.....	Amer. Car & Fdy.
	50	Tank	110,000	..	..	.....	.....	August	.....	General American
American Gas & Electric Co.	2	Dep. Center Flat	180,000	39	4	Steel	52,000	January	Mar. '53	Greenville Steel Car
Armco Steel Corp.	8	Gondola	100,000	41	6	Steel	.....	September	1953	Pullman-Standard
	6	Triple Hopper	140,000	41	8	Steel	.....	September	.....	Amer. Car & Fdy.
Associated Cooperatives, Inc.	2	Tank	11,000g.	35	2	Steel	67,500	September	.....	Amer. Car & Fdy.
Atlas Powder Co.	3	Tank	8,000g.	..	..	.....	.....	January	June	General American
Belle Alkali Co.	1	Tank	4,000g.	..	..	.....	.....	March	Feb. '53	General American
Bethlehem Steel Co.	60	Slab	150,000	36	0	Steel	63,600	October	Apr. '53	Bethlehem Steel
A. R. Blossman, Inc.	3	Tank	11,000g.	..	..	.....	.....	June	Aug. '53	General American
Clark Bros. Co.	3	Box	140,000	60	0	Steel	.....	July	.....	Thrall Car
Consolidated Chemical Industries	25	Tank	9,850g.	34	0	Steel	55,000	October	.....	Amer. Car & Fdy.
Continental Tank Car Co.	75	Tank	11,000g.	35	2	Steel	66,000	Aug.-Oct.	.....	Amer. Car & Fdy.
Cornwell Chemicals, Inc.	2	Tank	8,000g.	..	..	.....	.....	January	August	General American
E. I. du Pont de Nemours & Co.	1	Tank	8,200g.	34	2	Steel	43,000	October	.....	Amer. Car & Fdy.
Eastern Gas & Fuel Associates	3	Gondola	140,000	34	8	Steel	57,860	January	July '53	Greenville Steel Car
Ethyl Corp.	30	Tank	6,000g.	30	9	Steel	60,700	1952	.....	Amer. Car & Fdy.
	10	Tank	6,000g.	..	..	.....	.....	April	Apr. '53	General American
	12	Tank	3,000g.	..	..	.....	.....	July	May '53	General American
Fruit Growers' Express	500	Refrig.	112,000	40	0	Steel	56,100	March	1952-53	Co. Shops
	500	Refrig.	112,000	40	0	Steel	56,000	March	1952-53	Pac. Car & Fdy.
	50	Mech. Refrig.	128,000	44	5	Steel	81,500	August	1953	Co. Shops
General American Transportation Corp.	1,331*	Tank	.....	..	..	.....	.....	1952	.....	General American
General Steel Castings Co.	3	Air Dump	.....	..	..	.....	.....	1952	.....	Baldwin-Lima-Ham.
Interlake Iron Corp.	6	Triple Hopper	140,000	41	8	Steel	.....	July	.....	Amer. Car & Fdy.
Inland Steel Co.	17	Flat	140,000	40	6	Steel	.....	June	.....	Thrall Car
	26	Gondola	180,000	..	..	.....	.....	October	.....	Thrall Car
Kaiser Engineers	10	Hopper	140,000	41	0	Steel	.....	June	.....	Thrall Car
Kennecott Copper Corp.	55	Air Dump	180,000	..	..	Steel	.....	1952	.....	Baldwin-Lima-Ham.
Lion Oil Co.	20	Tank	11,000g.	..	..	.....	.....	July	Aug. '53	General American
Lone Star Producing Co.	1	Tank	11,000g.	..	..	Steel	.....	November	.....	Amer. Car & Fdy.
Merchants Despatch Transportation	200	Refrig.	84,000	40	6	Steel	50,000	February	Jan. '53	Despatch Shops
	500	Refrig.	70,000	33	2	Steel	57,500	August	Sept. '53	Despatch Shops
National Malleable & Steel Castings Co.	2	Box	100,000	40	6	Steel	.....	July	1953	Pullman-Standard
North American Car Corp.	100	Refrig.	80,000	39	10	Steel	61,000	January	December	Co. Shops
	75	Cov. Hopper	140,000	29	3	Steel	50,100	August	Mar. '53	Pullman-Standard
	100	Cov. Hopper	140,000	29	3	Steel	50,100	February	Feb. '53	Pullman-Standard
	17	Cov. Hopper	140,000	29	3	Steel	50,000	July	Jan. '53	Pullman-Standard
Northern Refrigerator Lines	500	Refrig.	70,000	33	2	Steel	57,500	August	Dec. '53	Despatch Shops
Oliver Iron Mining Co.	1	Flat	100,000	..	..	.....	.....	February	1952	Thrall Car
	139	Air Dump	.....	..	..	.....	.....	1952	.....	Baldwin-Lima-Ham.
Phelps Dodge Corp.	6	Flat	100,000	..	..	.....	.....	1952	.....	Baldwin-Lima-Ham.
	24	Air Dump	180,000	..	..	.....	.....	1952	.....	Baldwin-Lima-Ham.
Phillips Petroleum Co.	250	Tank	11,000g.	35	2	Steel	66,000	February	.....	Amer. Car & Fdy.
Pullman-Standard	100	Box	100,000	40	6	Steel	.....	November	1953	Pullman-Standard
Republic Tank Car	50	Tank	11,000g.	35	2	Steel	66,000	Feb.-Mar.	.....	Amer. Car & Fdy.
Rural Natural Gas Co.	20	Tank	11,000g.	35	2	Steel	67,500	November	.....	Amer. Car & Fdy.
St. Louis Refrigerator Car Co.	100	Refrig.	80,000	40	0	Steel	49,000	May	Apr. '53	Co. Shops
	200	Refrig.	80,000	40	0	Steel	49,000	May	Apr. '53	Pressed Steel Car
Shawinigan Products Corp.	1	Tank	8,000g.	..	..	.....	.....	September	Sept. '53	General American
Shippers' Car Line Corp.	200	Tank	11,000g.	35	2	Steel	69,900	November	.....	Amer. Car & Fdy.
	15	Multi-unit Tank	80,000	42	2	Steel	.....	March	.....	Amer. Car & Fdy.
	5	Tank	8,000g.	33	6	Steel	44,500	October	.....	Amer. Car & Fdy.
	200	Tank	11,000g.	35	2	Steel	69,900	October	.....	Amer. Car & Fdy.
Thos. E. Snyder & Sons Co	10	Tank	6,000g.	..	..	Steel	.....	November	.....	Amer. Car & Fdy.
Stauffer Chemical Co.	4	Tank	9,850g.	..	..	.....	.....	April	June '53	General American
	5	Tank	8,000g.	..	..	.....	.....	Oct.	Jan. '53	General American
Tennessee Copper Co.	6	Air Dump	.....	..	..	.....	.....	1952	.....	Baldwin-Lima-Ham.
Union Tank Car	600	Tank	100,000	..	..	.....	70,000	October	1953	Co. Shops
United Fuel Gas Co.	10	Tank	8,000g.	..	..	.....	.....	May	May '53	General American
United States Steel Co.	12	Air Dump	30-yd.	..	..	.....	.....	1952	.....	Baldwin-Lima-Ham.
Voorhees Walker (duPont)	4	Flat	200,000	43	6	Steel	.....	January	December	Thrall Car
Western Fruit Express	50	Mech. Refrig.	128,000	44	5	Steel	81,500	August	1953	Co. Shops
	300	Refrig.	108,000	33	2	Steel	60,600	November	1953	Co. Shops
Youngstown Sheet & & Tube Co.	36	Gondola	140,000	40	0	Steel	57,700	August	May '53	Bethlehem Steel

* For leasing.

renewed their pledge to carry out the program to increase their freight-car inventory to 1,850,000 units, but, because of the delays in securing materials, they have set the date of attainment at December 31, 1954, the "earliest date possible under present conditions of materials supply."

Continuing its support of this program, the D.T.A., after a reappraisal of its production goal calling for the delivery of 296,500 new freight cars to the railroads between January 1, 1951, and July 1, 1954, advanced the latter date to October 1, 1954, and recommended to D.P.A. the allocation of material for 33,000 new cars during the first quarter of 1953; for 27,000 cars other than tank and for 1,500 tank cars during the second quarter, and thereafter for 38,600 new cars per quarter.

Are there prospects of attainment? The steel allotment for equipment during the first quarter of 1953 is 1,071,453 tons, a reduction of almost 25 per cent from that for the fourth quarter of 1952.

The long-term view does not seem to weigh heavily in the thinking of the government allocation authorities. As suggested in the recent annual report of D.T.A., unless transportation capacity is in balance with the potential capacity of the nation for defense production and mobilization, that potential capacity cannot be made actual in an emergency. If it is difficult to find the materials to build up the transportation capacity to a proper balance now, during a state of partial mobilization, will it not become infinitely more difficult to do so when a real emergency is upon us?

United States — Export

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Bolivian State Railways	30	Box	66,000	36	1	Steel Frame	31,800	October	June '53	Magor Car
Canadian General Transit Co.	13	Tank	11,200g.	..	..	.....	.....	April	June '53	General American
Canadian Pacific	65	Tank	19,215g.	45	8	Steel	68,000	November	.....	Amer. Car & Fdy.
Electro Metallurgical Co.(Canada)	32	Ore	140,000	19	10	Steel	.....	November	1953	Pullman-Standard
Esso Standard Oil Co.:										
For Costa Rica	1	Tank	7,500g.	..	.	.....	.....	January	June '53	General American
For Honduras	1	Tank	8,000g.	..	..	.....	.....	January	June '53	General American
General American Transportation Corp	40*	Tank	.....	..	..	.....	.....	.....	.....	General American
Hollinger Hanna, Ltd. (Canada)	1,200	Ore	190,000	29	2	Steel	.....	April	1953	Pullman-Standard
Iron Mines Co., (Venezuela)	20	Ore	140,000	19	8	Steel	41,925	November	June '53	Bethlehem Steel
Orinoco Mining Co., (Venezuela)	5	Caboose	.....	30	0	Steel	49,500	June	1952-53	Intl. Ry. Car
	8	Box	100,000	40	6	Steel	.....	April	1953	Pullman-Standard
	7	Tank	10,000g.	33	6	Steel	45,500	April	.....	Amer. Car & Fdy.
	560	Ore	200,000	25	0	Steel	51,000	January	Oct. '53	Magor Car
	20	Air Dump	100,000	31	10	Steel	59,000	January	Feb. '53	Magor Car
Paulista Ry.(Brazil)	438	Box	100,000	40	6	Steel	44,000	October	Sept. '53	Pressed Steel Car
Petroleos Mexicanos	10	Tank	10,000g.	..	..	.....	.....	April	.....	General American
Sorocabana Ry. (Brazil)	1,000	Box	.....	40	6	Steel	31,000	September	.....	Pressed Steel Car
	300	Stock	.....	40	6	Steel	28,700	September	.....	Pressed Steel Car
	200	Gondola	.....	40	6	Steel	31,800	September	.....	Pressed Steel Car
Texas Co.:										
For Colombia	1	Tank	6,000g.	..	..	.....	.....	January	June '53	General American
For Costa Rica	2	Tank	6,000g.	..	..	.....	.....	September	.....	General American
For Honduras	1	Tank	8,000g.	..	..	.....	.....	April	June '53	General American
Union Miniere du Haut Katanga (Belgian Congo)	24	Air Dump	28-yard	..	..	.....	.....	1952	.....	Baldwin-Lima-Ham.

* For leasing abroad.

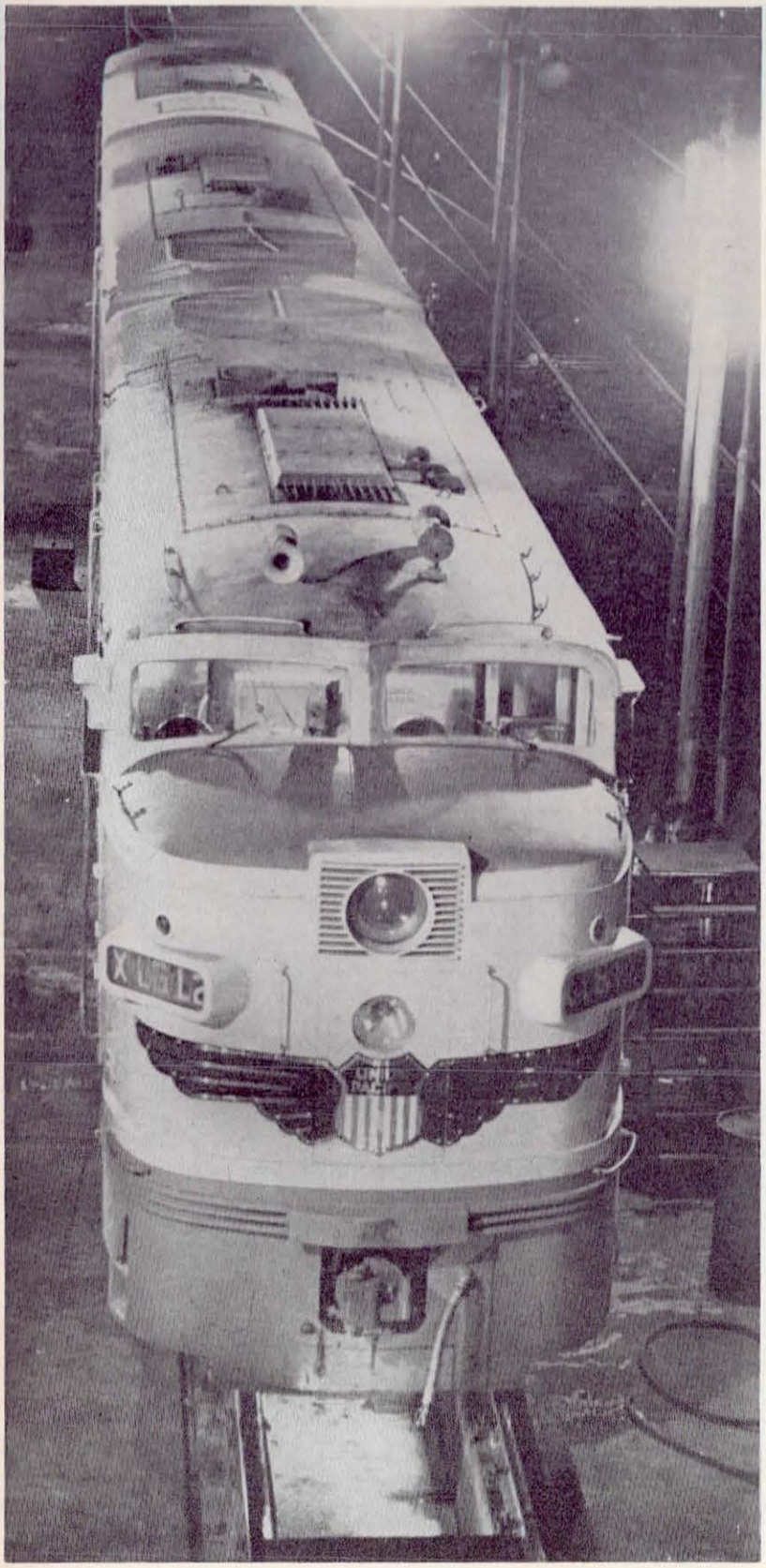
Canada

Purchaser	No.	Class	Capacity	Length Ft.	Length In.	Construction	Weight Lb.	Date of Order	Date of Delivery	Builder
Algoma Steel Corp	21	Flat	200,000	34	0	Steel Frame	.....	January	1952	Can. Car & Fdy.
	10	Hopper	140,000	33	0	Steel	41,700	August	3rd qtr. '53	National Steel Car
	11	Gondola	200,000	36	0	Steel	52,000	August	3rd qtr. '53	National Steel Car
Canadian National	100	Hart Convertible	100,000	42	0	Steel Frame	.....	January	Mar. '53	Can. Car & Fdy.
	50	Ore	160,000	22	11	Steel	.....	January	Mar. '53	Eastern Car
	150	Flat	60,000	40	0	Steel Underframe	.....	November	June '53	Can. Car & Fdy.
	5	Dep. Center Flat	270,000	59	9	Steel Underframe	.....	November	Aug. '53	Can. Car & Fdy.
	500	Gondola	140,000	52	6	Steel	.....	November	June '53	Eastern Car
	300	Triple Hopper	140,000	40	8	Steel	.....	November	June '53	Eastern Car
	100	Box	60,000	35	10	Steel Frame	.....	November	June '53	Eastern Car
	30	Air Dump	100,000	31	7	Steel	.....	November	Mar. '53	Eastern Car
	1,000	Ore	150,000	19	10	Steel	.....	November	1954	National Steel Car
	200	Refrig.	100,000	..	..	Steel Frame	.....	November	June '53	National Steel Car
	150	Refrig.	60,000	29	5	Steel Frame	.....	November	June '53	National Steel Car
	75	Gondola	80,000	36	0	Steel	.....	November	June '53	Marine Indust., Ltd
Canadian Pacific	500	Hopper	140,000	40	8	Steel	.....	November	1953	Can. Car & Fdy.
	500	Gondola	158,000	52	6	Steel Frame	51,900	November	Aug. '53	Eastern Car
	50	Ore Concentrate	158,000	23	9	Steel	51,300	November	Oct. '53	Eastern Car
	150	Refrig.	100,000	40	0	Steel	64,000	November	1953	National Steel Car
	25	Express Refrig.	100,000	40	0	Steel	75,500	November	1953	National Steel Car
	100	Cov. Hopper	140,000	36	0	Steel	51,000	November	1953	National Steel Car
Hollinger Hanna, Ltd.	2	Refrig.	100,000	40	6	Steel	64,000	January	Feb. '53	National Steel Car
Imperial Oil, Ltd. (Newfoundland)	6	Tank	6,000g.	26	2	Steel	.....	April	November	Can. Car & Fdy.
Quebec, North Shore & Labrador	10	Air Dump	144,000	31	7	Steel	66,000	December	Apr. '53	Eastern Car
Steel Co. of Canada	5	Air Dump	140,000	29	6	Steel	65,000	June	September	National Steel Car
Toronto, Hamilton & Buffalo	300	Box	100,000	40	6	Steel	44,800	July	Apr. '53	National Steel Car
	100	Gondola	140,000	52	6	Steel	56,000	July	May '53	National Steel Car
Western Chemicals, Ltd	1	Multi-unit Tank	.....	..	..	.....	.....	1952	.....	Can. Car & Fdy.

Motive Power Orders In 1952

By H. C. WILCOX and FRED C. MILES

Associate Editors



This American-G. E. diesel is being serviced for a fast run.

Orders were placed in this country during 1952 for 1,999 diesel-electric locomotive units; 15 steam, 10 electric and 15 gas turbine-electric locomotives; and one diesel-hydraulic and two hydraulic locomotives, according to information obtained by *Railway Age*. These totals include export orders for 182 diesel-electric units, as well as the diesel-hydraulic and hydraulic units mentioned previously. Because of security restrictions, *Railway Age* is unable to tabulate orders placed by the Transportation Corps.

The accompanying detailed list of motive power orders was compiled by *Railway Age* from data submitted by railroads, private car lines, industrial concerns and contract locomotive builders. When orders for diesels were reported in terms of complete locomotives, rather than as units, they are so tabulated below, to indicate how the purchaser intends to use the equipment. When figures were compiled for the smaller tables, however, such complete locomotives were divided into their unit components.

Decline of Steam

As of November 1, 1952, there were 16,606 steam locomotives and 14,354 diesel-electric locomotives (comprising a total of 20,220 units) on the railroads of this country. In freight service steam motive power now performs only 36 per cent of the locomotive mileage and diesel 61.5 per cent. On the basis of gross ton-miles, however, the diesel is doing 66.5 per cent of the work in freight service.

In passenger service, the use of steam locomotives has declined to such an extent that the diesel is now doing 71 per cent of the work, based on locomotive-miles run. In switching service, the diesel is now doing 78 per cent of the work, based on freight-yard switching locomotive-hours.

The statistics in the table entitled "Ownership of Motive Power" show a comparison of the situation with respect to both steam and diesel-electric locomotives over an 11-year period, 1942 compared with 1952 as well as the previous year, 1951.

The railroads did a real job of disposing of obsolete steam power during the twelve months ended November 1 last, having removed from the inventory 5,742 steam locomotives which were replaced during the same period by 2,425 diesel locomotives.

A comparison of the so-called replacement figures

OWNERSHIP OF MOTIVE POWER*

STEAM LOCOMOTIVES

	1942	1951	1952	1952 vs. 1942 Increase or Decrease	1952 vs. 1951 Increase or Decrease
Passenger	6,498	3,269	2,438	4,060	831
Freight	24,650	14,352	10,742	13,908	3,610
Passenger or Freight	1,306	1,030	756	550	274
Switch	7,165	3,697	2,670	4,495	1,027
Total	39,619	22,348	16,606	23,013	5,742

DIESEL-ELECTRIC LOCOMOTIVES

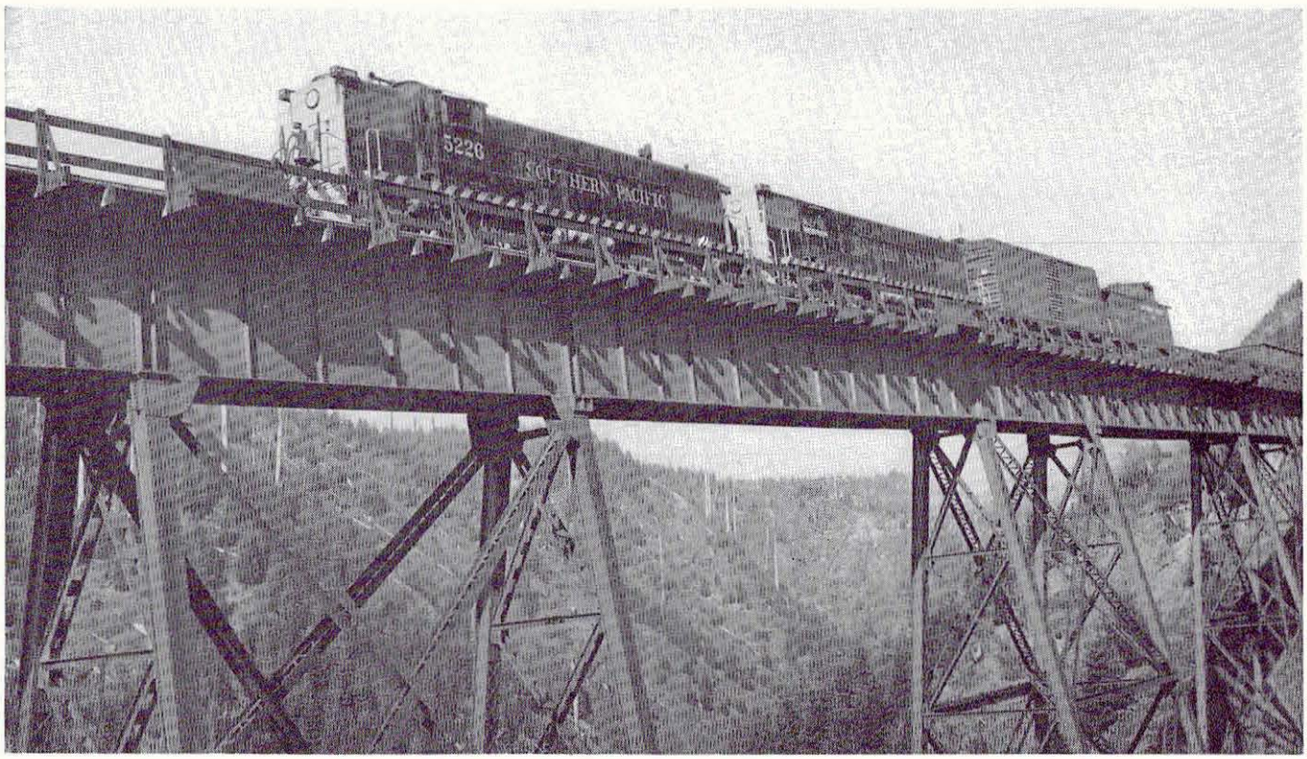
	1942	1951	1952	1952 vs. 1942 Increase or Decrease	1952 vs. 1951 Increase or Decrease
Passenger	156	1,049	1,342	1,186	342
Freight	52	3,585	4,781	4,729	1,196
Passenger or Freight	20	509	638	618	129
Switch	1,284	6,786	7,593	6,309	807
Total	1,512	11,929	14,354	12,842	2,425

*Data from A.A.R. Car Service Report 56-A1

DIESEL LOCOMOTIVE UNITS ORDERED IN 1952 BY HORSEPOWER AND PURCHASER

Horsepower	Railroads	Private Car Lines and Others	For Export	Total
2,400	10	0	0	10
2,250	53	0	0	53
2,000	6	0	0	6
1,600	289	0	30	319
1,500	978	5	53	1,036
1,350	0	0	2	2
1,200	247	1	0	248
1,000	75	1	0	76
800	46	14	12	72
660	3	6	36	45
650	1	0	0	1
600	9	7	14	30
550	0	20	6	26
540	0	1	0	1
470	0	1	0	1
450	0	0	3	3
400	1	0	7	8
380	0	2	2	4
300	0	16	15	31
275	0	7	0	7
270	0	1	1	2
190	0	1	2*	3
150	0	16	1	17
135	0	0	1**	1
	1,718	99	185	2,002

*Hydraulic
**Diesel-Hydraulic



Two 1,500-hp Baldwin-Lima-Hamilton units on the Southern Pacific.

shown in the last column of the above mentioned table throws some light on the rate of replacement. In 1942 there were 7,165 steam switchers in the motive power inventory, 4,495 of which have been disposed of in the past 11 years leaving a total of 2,670 steam switching locomotives still in service along with 7,593 diesel-electric switchers. These figures once again indicate that the diesel switcher was not merely installed as a replacement unit but that its introduction into the railroad field opened up new possibilities for the use of this type of power.

One of the really significant events in the motive power field in 1952 was the order for 15 additional gas-turbine locomotives for service on the Union Pacific. This may be a slight indication that this newest type of motive power is passing from the experimental to the practical stage.

Locomotives Ordered, 1935-1952

Year	Steam	Diesel	Electric	Total	U. S. Export
1952	15	1,817*	25**	1,857	185
1951	22	4,038*	14	4,074	362
1950	15	4,473*	28#	4,516	234
1949	13	1,782*	10	1,805	115
1948	54	2,661*	2	2,717	435
1947	79	2,149	1	2,229	655
1946	55	989	8	1,052	629
1945	148	691	6	845	1,895
1944	74	680	3	757	134
1943	413	635	0	1,048	60
1942	363	894	12	1,269	32
1941	302	1,104	38	1,444	85
1940	207	492	13	712	85
1939	119	249	32	400	40
1938	36	160	29	225	24
1937	173	145	36	354	56
1936	435	77	24	536	22
1935	30	60	7	97	15

Note: U. S. Government purchases excluded for years 1942-1944 and 1952.
* Diesel orders are shown in units for 1948 through 1952; diesel orders for previous years are shown in locomotives, which may include one or more units.
# Includes 10 gas-turbine electrics.
** Includes 15 gas-turbine electrics.

Steam Locomotives Ordered in 1951
For Service in the United States

Purchaser	No.	Type	Service	Weight Lb.	Tractive Force	Cylinders	Date of Order	Date of Delivery	Builder
Norfolk & Western	15	0-8-0	Switching	247,000	62,932	(2) 25x28	April	Jan.-Aug. '53	R. R. Shops

Electric, Diesel and Other Internal Combustion Locomotives
Railroad Orders — For Service in the United States

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder
Ahnapee & Western	2	B-B	Switching	Diesel-Elec.	139,000	600	September	December	G. E.-Cooper-Bess.
Akron & Barberton Belt	1	B-B	Switching	Diesel-Elec.	240,000	1,200	January	July	Baldwin-West.
Alaska	6	B-B	Freight	Diesel-Elec.	230,000	1,500	October	....	Electro-Motive
Apalachicola Northern	3	B-B	Switching	Diesel-Elec.	248,000	1,200	January	.....	Electro-Motive
Ashley, Drew & Northern	1	B-B	Switching	Diesel-Elec.	248,000	1,200	January	.....	Electro-Motive
Atchison, Topeka & Santa Fe	50	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	February	Aug.-Sept.	Electro-Motive
	10	....	Rd.-Sw.	Diesel-Elec.	.....	1,600	February	Aug.-Sept.	American-G. E.
	1	B-B	Road	Diesel-Elec.	230,000	1,500	April	July	Electro-Motive
	6	4 (B-B)	Passenger	Diesel-Elec.	920,000	6,000	July	October	Electro-Motive
	4	3 (B-B)	Passenger	Diesel-Elec.	690,000	4,500	July	December	Electro-Motive
	10	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,600	July	December	American-G. E.
	20	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	July	October	Electro-Motive
	25	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	September	Nov.-Dec.	Electro-Motive
	10	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	October	December	Electro-Motive
	10	....	Switching	Diesel-Elec.	.....	1,200	1952	.....	Fairbanks, Morse
Atlanta & West Point	1	B-B	Freight	Diesel-Elec.	240,000	1,500	July	November	Electro-Motive
Atlantic Coast Line	4	B-B	Freight	Diesel-Elec.	258,000	1,500	May	September	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	247,000	1,200	May	December	Electro-Motive
Baltimore & Ohio	27	B-B	Freight	Diesel-Elec.	246,000	1,500	July	Jan. '53	Electro-Motive
	10	B-B	Freight	Diesel-Elec.	247,000	1,600	July	Feb.-Mar.'53	American-G. E.
	9	B-B	Freight	Diesel-Elec.	253,000	1,600	1952	1953	Baldwin-West.
	13	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	July	Jan. '53	Electro-Motive
	1	B-B	Rd.-Sw.	Diesel-Elec.	242,000	1,600	July	Mar. '53	Baldwin-West.
	2	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,600	June	Dec. '52	Fairbanks, Morse-West.
Bamberger	2	B-B	Switching	Diesel-Elec.	230,000	800	April	1952	Electro-Motive
Bangor & Aroostook	4	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	January	August	Electro-Motive
Belt of Chicago	2	B-B	Switching	Diesel-Elec.	247,000	1,500	Mar.	August	Electro-Motive
Bessemer & Lake Erie	3	C-C	Pass.-Sw.	Diesel-Elec.	361,800	1,500	March	November	Electro-Motive
	18	B-B	Freight	Diesel-Elec.	.....	1,500	March	June	Electro-Motive
	2	C-C	Switching	Diesel-Elec.	355,000	1,600	March	August	Baldwin-West.
	2	B-B	Switching	Diesel-Elec.	230,300	1,000	March	August	American-G. E.
	8	B-B	Freight	Diesel-Elec.	246,500	1,500	November	Feb. '53	Electro-Motive
	5	C-C	Switching	Diesel-Elec.	330,000	1,500	November	1953	Electro-Motive
Buffalo & Susquehanna	3	B-B	Switching	Diesel-Elec.	230,000	800	September	.....	Electro-Motive
Butte, Anaconda & Pacific	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	February	.....	Electro-Motive
Canton	1	B-B	Switching	Diesel-Elec.	230,000	800	January	.....	Electro-Motive
Central of Georgia	15	B-B	Rd.-Sw.	Diesel-Elec.	246,250	1,600	April	August	American-G. E.
	2	B-B	Switching	Diesel-Elec.	248,000	1,200	January	July	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	246,000	1,200	August	Feb. '53	Fairbanks, Morse
	4	B-B	Switching	Diesel-Elec.	240,000	1,200	August	Mar. '53	Baldwin-Lima-Ham.
	12	B-B	Rd.-Sw.	Diesel-Elec.	246,250	1,600	August	December	American-G. E.
	4	B-B	Switching	Diesel-Elec.	242,000	1,200	August	Jan. '53	Electro-Motive
Central of New Jersey	13	B-B	Gen. Purpose	Diesel-Elec.	240,000	1,500	March	Nov.-Dec.	Electro-Motive
	4	B-B	Gen. Purpose	Diesel-Elec.	240,000	1,200	March	Jan. '53	Baldwin-West.
	13	B-B	Gen. Purpose	Diesel-Elec.	240,000	1,600	March	.....	American-G. E.
Central of Pennsylvania	2	B-B	Switching	Diesel-Elec.	248,000	1,200	March	December	Electro-Motive
	5	B-B	Gen. Purpose	Diesel-Elec.	240,000	1,600	March	.....	American-G. E.
	1	C-C	Gen. Purpose	Diesel-Elec.	360,000	1,600	March	.....	American-G. E.
Central Vermont	1	B-B	Switching	Diesel-Elec.	230,000	1,000	September	Jan. '53	American-G. E.
Chesapeake & Ohio	4	3 (B-B)	Freight	Diesel-Elec.	744,000	4,500	April	October	Electro-Motive
	1	2 (B-B)	Road	Diesel-Elec.	518,000	3,000	August	December	Electro-Motive
	17	B-B	Switching	Diesel-Elec.	258,000	1,500	August	October	Electro-Motive
	9	B-B	Switching	Diesel-Elec.	258,000	1,500	August	October	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	258,000	1,500	August	December	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	248,000	1,200	August	Jan. '53	Electro-Motive
	16	B-B	Switching	Diesel-Elec.	258,000	1,500	November	Jan. '53	Electro-Motive
Chicago & North Western	1	B-B	Switching	Diesel-Elec.	230,000	800	January	December	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	247,300	1,200	January	May	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	246,000	1,200	January	December	Fairbanks, Morse
	1	B-B	Freight	Diesel-Elec.	255,000	1,500	January	August	Electro-Motive
	16	B-B	Freight	Diesel-Elec.	246,000	1,500	January	Aug.-Sept.	Electro-Motive
	28	B-B	Freight	Diesel-Elec.	244,000	1,500	January	July-Aug.	Electro-Motive
	8	C-C	Freight	Diesel-Elec.	287,000	1,600	January	Oct.-Nov.	Fairbanks, Morse-West.
	6	B-B	Freight	Diesel-Elec.	247,000	1,600	January	August	American-G. E.
	2	C-C	Freight	Diesel-Elec.	284,000	1,600	January	August	American-G. E.
	4	B-B	Freight	Diesel-Elec.	231,000	1,500	January	July	Electro-Motive
	2	A1A-A1A	Passenger	Diesel-Elec.	337,500	2,250	January	August	Electro-Motive
Chicago, Burlington & Quincy	6	A1A-A1A	Passenger	Diesel-Elec.	332,345	2,250	October	September	Electro-Motive
	13	B-B	Rd.-Sw.	Diesel-Elec.	250,100	1,500	October	November	Electro-Motive
	12	C-C	Rd.-Sw.	Diesel-Elec.	296,000	1,500	October	December	Electro-Motive
Chicago, Milw., St. Paul & Pacific	3	C-C	Switching	Diesel-Elec.	295,000	1,500	January	June	Electro-Motive
	2	3 (B-B)	Passenger	Diesel-Elec.	.....	4,500	January	September	Electro-Motive
	12	C-C	Rd.-Sw.	Diesel-Elec.	.....	1,500	April	.....	Electro-Motive
	4	....	Switching	Diesel-Elec.	.....	1,000	January	September	American-G. E.
	1	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,200	January	October	Baldwin-West.
	1	B-B	Switching	Diesel-Elec.	.....	1,200	January	October	Baldwin-West.
Chicago, Rock Island & Pacific	30	B-B	Rd.-Sw.	Diesel-Elec.	244,000	1,500	October	1952	Electro-Motive
Chicago, St. Paul, Minneapolis & Omaha	5	B-B	Freight	Diesel-Elec.	244,000	1,500	January	June-Aug.	Electro-Motive
	1	B-B	Freight	Diesel-Elec.	247,100	1,600	January	August	American-G. E.
	1	B-B	Freight	Diesel-Elec.	255,400	1,600	January	August	American-G. E.
	1	B-B	Freight	Diesel-Elec.	256,500	1,600	January	August	American-G. E.
Chicago, West Pullman & Southern	2	B-B	Switching	Diesel-Elec.	222,200	800	May	November	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	224,100	800	May	November	Electro-Motive
	2	B-B	Switching	Diesel-Elec	238,600	1,200	May	November	Electro-Motive
Cincinnati Union Terminal	3	B-B	Switching	Diesel-Elec.	231,000	800	February	1952	Electro-Motive
Clinchfield	9	B-B	Freight	Diesel-Elec	246,000	1,500	June	December	Electro-Motive
	5	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	June	December	Electro-Motive

Electro-Motive power units leaving the Kansas City Southern shop in New Orleans.

Purchaser	No.	Wheel Arrange-ment	Service	Type	Weight Lb.	Horse-power	Date of Order	Date of Delivery	Builder
Colorado & Southern	10	C-C	Special Duty	Diesel-Elec.	315,000	1,500	June	Jan. '53	Electro-Motive
Conemaugh & Black Lick	2	B-B	Switching	Diesel-Elec.	248,000	1,200	April	.....	Electro-Motive
Davenport, Rock Island & North Western	2	B-B	Switching	Diesel-Elec.	188,200	600	1952	August	American-G. E.
Delaware & Hudson	50	B-B	Rd.-Sw.	Diesel-Elec.	248,100	1,500	January	1952	American-G. E.
Delaware, Lackawanna & Western	6	B-B	Gen. Purpose	Diesel-Elec.	246,000	1,600	August	December	Fairbanks, Morse-West.
	2	B-B	Switching	Diesel-Elec.	230,000	800	September	May '53	Electro-Motive
	3	B-B	Switching	Diesel-Elec.	248,000	1,200	September	May '53	Electro-Motive
	5	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	September	May '53	Electro-Motive
	10	C-C	Gen. Purpose	Diesel-Elec.	375,000	2,400	October	May-June '53	Fairbanks, Morse-West.
Detroit & Toledo Shore Line	1	B-B	Freight	Diesel-Elec.	237,000	1,500	November	Apr. '53	Electro-Motive
Detroit, Toledo & Ironton	7	B-B	Rd.-Sw.	Diesel-Elec.	254,000	1,500	July	1st qtr. '53	Electro-Motive
Erie	14	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,500	January	.....	Electro-Motive
Escanaba & Lake Superior	1	B-B	Switching	Diesel-Elec.	198,500	800	January	July	Baldwin-West.
Florida East Coast	8	B-B	Switching	Diesel-Elec.	248,000	1,200	August	October	Electro-Motive
	15	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,500	August	Jan. '53	Electro-Motive
Ft. Worth & Denver	1	2(A1A-A1A)	Passenger	Diesel-Elec.	663,000	4,500	June	.....	Electro-Motive
	8	C-C	Freight	Diesel-Elec.	297,000	1,500	June	Jan-Feb. '53	Electro-Motive
Garden City Western	1	B-B	Switching	Diesel-Elec.	196,000	600	September	.....	Electro-Motive
Georgia	1	B-B	Freight	Diesel-Elec.	253,000	1,500	February	August	Electro-Motive
	2	B-B	Freight	Diesel-Elec.	253,000	1,500	July	October	Electro-Motive
Grand Trunk Western	1	B-B	Switching	Diesel-Elec.	230,000	1,000	September	Jan. '53	American-G. E.
	7	B-B	Switching	Diesel-Elec.	248,000	1,200	1952	.....	Electro-Motive
Great Northern	2	B-B	Comb.	Diesel-Elec.	243,000	1,500	May	.....	Electro-Motive
Gulf Coast Lines	5	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	December	Mar.-Apr.'53	Electro-Motive
Gulf, Mobile & Ohio	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	February	July	American-G. E.
Illinois Central	8	A1A-A1A	Passenger	Diesel-Elec.	316,500	2,250	February	.....	Electro-Motive
	7	B-B	Rd.-Sw.	Diesel-Elec.	242,000	1,500	February	.....	Electro-Motive
	35	B-B	Switching	Diesel-Elec.	248,000	1,200	February	.....	Electro-Motive
Indianapolis Union	3	B-B	Switching	Diesel-Elec.	246,000	1,200	January	October	Fairbanks, Morse-West.
International-Great Northern	5	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	December	Mar.-Apr.'53	Electro-Motive
Kansas City Southern	8	B-B	Rd.-Sw.	Diesel-Elec.	239,000	1,500	November	.....	Electro-Motive
Kansas, Oklahoma & Gulf	5	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,500	1952	.....	Electro-Motive
Kentucky & Indiana Terminal	2	B-B	Switching	Diesel-Elec.	246,000	1,200	May	Mar. '53	Fairbanks, Morse
Lehigh Valley	3	B-B	Switching	Diesel-Elec.	30,000	800	January	December	Electro-Motive
Louisiana Midland	1	B-B	Switching	Diesel-Elec.	196,000	600	October	.....	Electro-Motive
Louisville & Nashville	2	B-B	Freight	Diese.-Elec.	240,000	1,600	April	1952	American-G. E.
	7	B-B	Freight	Diesel-Elec.	240,000	1,600	April	1952	American-G. E.
	12	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	April	1952	American-G. E.
	16	B-B	Switching	Diesel-Elec.	230,000	1,000	April	1952	American-G. E.
	15	B-B	Rd. Sw.	Diesel-Elec.	240,000	1,500	April	1952	Electro-Motive
	3	B-B	Switching	Diesel-Elec.	248,000	1,200	April	1953	Electro-Motive
	30	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	October	1953	Electro-Motive
	4	B-B	Freight	Diesel-Elec	240,000	1,500	October	1953	Electro-Motive
	2	B-B	Switching	Diesel-Elec.	248,000	1,200	October	1953	Electro-Motive
	2	B-B	Freight	Diesel-Elec.	240,000	1,600	October	1953	American-G. E.
	7	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,600	October	1953	American-G. E.
	4	B-B	Switching	Diesel-Elec.	230,000	1,000	October	1953	American-G. E.
Maine Central	2	B-B	Switching	Diesel-Elec.	190,000	660	July	.....	American-G. E.
	6	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	July	October	Electro-Motive

Fairbanks-Morse 1,200-hp switcher working a yard trick for the Nickel Plate.

Electric, Diesel and Other Internal Combustion Locomotives
Railroad Orders—For Service in the United States (cont.)

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder
Manistique & Lake Superior	1	B-B	Switching	Diesel-Elec.	.....	660	February	October	American-G. E.
Meridian & Bigbee River	1	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	August	.....	Electro-Motive
Midland Valley	4	B-B	Rd.-Sw.	Diesel-Elec.	245,000	1,500	October	.....	Electro-Motive
Minneapolis & St. Louis	2	C-C	Rd.-Sw.	Diesel-Elec.	335,000	1,500	March	December	Electro-Motive
Missouri-Illinois	2	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,600	October	Mar. '53	American-G. E.
Missouri-Kansas-Texas	5	B-B	Switching	Diesel-Elec.	229,500	1,200	February	May	Baldwin-West.
	2	B-B	Rd.-Sw.	Diesel-Elec.	250,000	1,600	February	Jan. '53	Baldwin-West.
	2	B-B	Rd.-Sw.	Diesel-Elec.	260,000	1,600	February	Jan. '53	Baldwin-West.
	2	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	February	December	Electro-Motive
	4	B-B	Rd.-Sw.	Diesel-Elec.	247,000	1,500	February	December	Electro-Motive
Missouri Pacific	19	B-B	Freight	Diesel-Elec.	241,500	1,600	December	Apr.-May '53	American-G. E.
	28	B-B	Rd.-Sw.	Diesel-Elec.	246,000	1,500	December	Mar.-Apr. '53	Electro-Motive
Monongahela	7	B-B	Switching	Diesel-Elec.	240,000	1,200	August	November	Baldwin-West.
Montour	4	B-B	Switching	Diesel-Elec.	248,000	1,200	February	December	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	248,000	1,200	July	Jan. '53	Electro-Motive
Nashville, Chattanooga & St. Louis	3	B-B	Freight	Diesel-Elec.	240,000	1,500	May	September	Electro-Motive
New York Central	24	B-B	Freight	Diesel-Elec.	248,000	1,600	January	October	American-G. E.
New York, Chicago & St. Louis	10	B-B	Gen. Purpose	Diesel-Elec.	237,000	1,500	February	Jan. '53	Electro-Motive
	10	B-B	Switching	Diesel-Elec.	220,400	1,000	June	1st qtr. '53	American-G. E.
	5	B-B	Switching	Diesel-Elec.	246,000	1,200	June	Mar. '53	Fairbanks, Morse.
New York, New Haven & Hartford	10	C+C	Passenger	Electric	348,000	4,000	November	1953	General Electric
Norfolk Southern	5	B-C	Comb.	Diesel-Elec.	255,000	1,600	April	September	Baldwin-West.
Northwestern Pacific	13	C-C	Freight	Diesel-Elec.	329,900	1,500	March	1952-53	Electro-Motive
	8	B-B	Freight	Diesel-Elec.	206,860	800	March	1953	Electro-Motive
Northern Pacific	3	B-B	Switching	Diesel-Elec.	230,000	1,000	June	Jan. '53	American-G. E.
	3	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,600	June	November	American-G. E.
	1	B-B	Switching	Diesel-Elec.	246,000	1,200	June	Feb. '53	Electro-Motive
	1	B-B	Rd.-Sw.	Diesel-Elec.	245,000	1,500	June	December	Electro-Motive
Oregon, Pacific & Eastern	1	B-B	Freight	Diesel-Elec.	140,000	650	January	April	G. E.-Cooper-Bess.
Pecos Valley	1	B-B	Rd.-Sw.	Diesel-Elec.	140,000	600	November	December	G. E.-Cooper-Bess.
Pennsylvania-Reading Seashore Lines	4	B-B	Road	Diesel-Elec.	242,000	1,600	July	Mar. '53	Baldwin-West.
Pittsburgh & Lake Erie	13	B-B	Rd.-Sw.	Diesel-Elec.	244,000	1,500	November	Apr. '53	Electro-Motive
Pittsburgh & West Virginia	6	B-B	Freight	Diesel-Elec.	250,000	2,000	August	Feb. '53	Fairbanks, Morse-West.
Pittsburgh, Chartiers & Youghiogheny	1	B-B	Switching	Diesel-Elec.	248,000	1,200	March	November	Electro-Motive
Portland Traction Co.	2	B-B	Switching	Diesel-Elec.	196,000	600	1952	Mar. '53	Electro-Motive
Reading	8	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	January	.....	Electro-Motive
	4	B-B	Comb.	Diesel-Elec.	242,000	1,600	February	November	Baldwin-West.
Rutland	4	B-B	Freight	Diesel-Elec.	248,000	1,600	April	August	American-G. E.
St. Louis Southwestern	4	B-B	Freight	Diesel-Elec.	246,000	1,500	May	October	Electro-Motive
	4	B-B	Freight	Diesel-Elec.	244,800	1,600	May	October	American-G. E.
	3	B-B	Freight	Diesel-Elec.	325,000	1,600	July	December	American-G. E.
	1	B-B	Passenger	Diesel-Elec.	253,800	1,600	May	October	American-G. E.
Seaboard Air Line	4	B-B	Switching	Diesel-Elec.	224,000	1,200	September	Jan. '53	Baldwin-West.
	6	B-B	Switching	Diesel-Elec.	240,000	1,200	September	Jan. '53	Baldwin-West.
	10	B-B	Switching	Diesel-Elec.	230,000	1,000	September	Jan. '53	American-G. E.
	5	B-B	Freight	Diesel-Elec.	247,930	1,600	September	October	American-G. E.
	5	B-B	Freight	Diesel-Elec.	246,340	1,600	September	October	American-G. E.
	25	B-B	Freight	Diesel-Elec.	246,800	1,500	August	September	Electro-Motive
	5	A1A-A1A	Passenger	Diesel-Elec.	303,000	2,250	August	December	Electro-Motive
Southern	13	B-B	Freight	Diesel-Elec.	246,000	1,500	June	Sept.-Nov.	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	240,000	1,500	October	Jan. '53	Electro-Motive

Purchaser	No.	Wheel Arrange-ment	Service	Type	Weight Lb.	Horse-power	Date of Order	Date of Delivery	Builder
	1	B-B	Switching	Diesel-Elec.	240,000	1,500	October	Jan. '52	Electro-Motive
	15	B-B	Switching	Diesel-Elec.	240,000	1,500	November	Jan. 53	Electro-Motive
	15	B-B	Switching	Diesel-Elec.	248,000	1,600	November	Jan.-Feb. '53	American-G. E.
Southern Pacific	80	B-B	Comb.	Diesel-Elec.	232,000	1,500	1952	.....	Electro-Motive
	16	C-C	Rd.-Sw.	Diesel-Elec.	328,000	1,500	1952	.....	Electro-Motive
	13	B-B	Switching	Diesel-Elec.	328,000	800	1952	.....	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	248,000	1,200	1952	.....	Electro-Motive
	22	B-B	Switching	Diesel-Elec.	240,000	1,200	May	Apr. '53	Baldwin-West.
	6	B-B	Switching	Diesel-Elec.	246,000	1,200	April	1952	Fairbanks, Morse
	21	C-C	Freight	Diesel-Elec.	313,000	1,600	April	1952-53	American-G. E.
	2	C-C	Switching	Diesel-Elec.	313,000	1,600	April	Feb. '53	American-G. E.
	15	B-B	Switching	Diesel-Elec.	220,000	1,000	April	1952-53	American-G. E.
	3	3(A1A-A1A)	Passenger	Diesel-Elec.	854,000	6,750	April	1st qtr. '53	American-G. E.
Spokane, Portland & Seattle	4	B-B	Freight	Diesel-Elec.	245,000	1,600	October	Jan. '53	American-G. E.
	4	B-B	Passenger	Diesel-Elec.	230,000	1,500	October	Jan. '53	Electro-Motive
Steelton & Highspire	2	B-B	Switching	Diesel-Elec.	246,000	1,200	April	.....	Electro-Motive
Terminal R. R. Assn. of St. Louis	4	B-B	Switching	Diesel-Elec.	240,000	1,200	January	July	Baldwin-West.
Terminal Ry., Alabama State Docks	5	B-B	Switching	Diesel-Elec.	240,000	1,000	April	November	American-G. E.
Toledo Terminal	1	B-B	Switching	Diesel-Elec.	230,000	1,000	April	October	American-G. E.
Union (Memphis)	7	B-B	Switching	Diesel-Elec.	238,000	1,200	December	Apr.-May '53	Baldwin-West.
Union Pacific	2	2(B-B)	Passenger	Diesel-Elec.	.....	3,000	April	April	Electro-Motive
	2	3(B-B)	Freight	Diesel-Elec.	.....	4,500	September	October	Electro-Motive
	22	A1A-A1A	Passenger	Diesel-Elec.	.....	2,250	October	1st half, '53	Electro-Motive
	10	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,500	October	1st half, '53	Electro-Motive
	22	B-B	Switching	Diesel-Elec.	.....	1,200	October	1st half, '53	Electro-Motive
	15	....	Freight	Gas turbine electric	....	4,500	December	1953-54	General Electric
Upper Merion & Plymouth	1	B-B	Rd.-Sw.	Diesel-Elec.	88,000	400	April	June	G. E.-Cater.
Utah	3	B-B	Rd.-Sw.	Diesel-Elec.	360,000	1,600	May	August	American-G. E.
Wabash	4	2(B-B)	Freight	Diesel-Elec.	.....	3,000	February	.....	Electro-Motive
	5	B-B	Gen. Purpose	Diesel-Elec.	.....	1,500	February	.....	Electro-Motive
	2	2(B-B)	Freight	Diesel-Elec.	.....	3,000	September	.....	Electro-Motive
	2	A1A-A1A	Passenger	Diesel-Elec.	.....	2,250	September	.....	Electro-Motive
	5	B-B	Rd.-Sw.	Diesel-Elec.	.....	1,500	September	.....	Electro-Motive
	3	B-B	Switching	Diesel-Elec.	.....	1,200	September	.....	Electro-Motive
	5	B-B	Switching	Diesel-Elec.	.....	800	September	.....	Electro-Motive
	3	B-B	Switching	Diesel-Elec.	.....	1,000	September	.....	American-G. E.
	3	B-B	Switching	Diesel-Elec.	.....	1,200	September	.....	Fairbanks, Morse-West.
	3	B-B	Switching	Diesel-Elec.	.....	1,200	September	.....	Baldwin-West.
	1	2(B-B)	Freight	Diesel-Elec.	.....	3,000	September	.....	G. M. Diesel, Ltd.
Western of Alabama	1	B-B	Freight	Diesel-Elec.	240,000	1,500	July	November	Electro-Motive
Western Maryland	16	B-B	Freight	Diesel-Elec.	230,000	1,500	July	December	Electro-Motive
	10	B-B	Freight	Diesel-Elec.	248,000	1,600	July	Jan. '53	American-G. E.
Western Pacific	6	B-B	Switching	Diesel-Elec.	248,000	1,200	January	.....	Electro-Motive
	9	B-B	Rd.-Sw.	Diesel-Elec.	240,000	1,500	April	.....	Electro-Motive

Other Orders—For Service in the United States

Purchaser	No.	Wheel Arrange-ment	Service	Type	Weight Lb.	Horse-power	Date of Order	Date of Delivery	Builder
Alabama Grain Elevator	1	B	Switching	Diesel-Elec.	50,000	150	April	September	G. E.-Cummins
Alberene Stone Company	1	B	Switching	Diesel-Elec.	50,000	150	August	Feb. '53	G. E.-Cummins
	1	B	Switching	Diesel-Elec.	70,000	275	September	Dec. '53	G. E.-Cummins
	1	B	Switching	Diesel-Elec.	50,000	150	September	Feb. '53	G. E.-Cummins
Alan Wood Steel Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	April	December	G. E.-Cummins
Allegheny Ludlum Steel Corp.	1	B-B	Switching	Diesel-Elec.	130,000	550	February	Jan. '53	G. E.-Cummins
American Creosote	1	B	Switching	Diesel-Elec.	50,000	150	February	June	G. E.-Cummins
	2	B-B	Switching	Diesel-Elec.	90,000	300	February	December	G. E.-Cummins
American Locomotive Company	1	B	Switching	Diesel-Elec.	70,000	275	October	June '53	G. E.-Cummins
American Viscose Corp.	1	B-B	Switching	Diesel-Elec.	90,000	300	April	June '53	G. E. -Cummins
Armco Steel Corp.	1	B-B	Switching	Diesel-Elec.	193,500	800	February	October	Baldwin-West.
Bethlehem Steel Co.	1	B-B	Switching	Diesel-Elec.	140,000	380	March	Jan. '53	Bald.-West.-Cummins
	1	B+B	Switching	Diesel-Elec.	200,000	540	March	Jan. '53	Bald.-West.-Cummins
W. G. Bush	1	B	Switching	Diesel-Elec.	50,000	150	August	Jan. '54	G. E.-Cummins
Columbia Quarry	1	B-B	Switching	Diesel-Elec.	100,000	300	October	Mar. '53	G. E.-Cummins
Columbia River Construction Co.	2	B	Switching	Diesel-Elec.	50,000	150	May	August	G. E.-Cummins
Copperweld Steel Co.	1	B-B	Switching	Diesel-Elec.	190,000	660	January	March	G. E.-Cooper-Bess.
Crossett Chemical Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	May	Jan. '53	G. E.-Cummins
J. T. Dyer Quarry	1	B-B	Switching	Diesel-Elec.	160,000	470	April	Jan. '53	Bald.-West.-Cummins
Hillyer Deutsch Edwards Co.	1	B	Switching	Diesel-Elec.	50,000	150	May	October	G. E.-Cummins
Electro Metallurgical Co.	1	B-B	Switching	Diesel-Elec.	190,000	660	May	May	G-E.-Cooper-Bess.
	1	B-B	Switching	Diesel-Elec.	190,000	660	April	Feb. '53	G. E.-Cooper-Bess.
Fruit Growers' Express	1	B-B	Switching	Diesel-Elec.	100,000	300	January	June	G. E.-Cummins
General Electric Co.	1	B	Switching	Diesel-Elec.	50,000	150	January	May	G. E.-Cummins
	1	B-B	Switching	Diesel-Elec.	90,000	300	May	Mar. '53	G. E.-Cummins
	1	B-B	Switching	Diesel-Elec.	160,000	550	June	May '53	G. E.-Cummins
Great Lakes Steel Corp.	2	B-B	Switching	Diesel-Elec.	196,000	600	March	.....	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	246,000	1,200	March	.....	Electro-Motive
	1	B-B	Switching	Diesel-Elec.	170,000	660	April	Feb. '53	G. E.-Cooper-Bess.
Greenville Steel Car Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	January	May	G. E.-Cummins
Hercules Powder Co.	1	B-B	Switching	Diesel-Elec.	130,000	380	February	November	Bald.-West.-Cummins
Holloway Gravel Inc.	1	B-B	Switching	Diesel-Elec.	230,000	800	September	.....	Electro-Motive
Illinois Slag	1	B	Switching	Diesel-Elec.	70,000	275	June	December	G. E.-Cummins
Inspiration Consolidated Copper Co.	1	B-B	Switching	Diesel-Elec.	140,000	600	November	1953	G. E.-Cooper-Bess.
Interlake Iron Corp.	1	B-B	Switching	Diesel-Elec.	160,000	550	January	Jan. '53	G. E.-Cummins
	1	B-B	Switching	Diesel-Elec.	190,000	660	April	May	G. E.-Cooper-Bess.
Iowa Power & Light Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	February	December	G. E.-Cummins
Kennecott Copper Co.	1	C-C	Rd.-Sw.	Diesel-Elec.	346,000	1,500	May	.....	Electro-Motive
Ketchikan Pulp Co.	1	B-B	Switching	Diesel-Elec.	100,000	270	September	Feb. '53	Baldwin-West.-Cummins
Koppers Co.	1	B	Switching	Diesel-Elec.	50,000	150	November	1953	G. E.-Cummins
Louisville Cement	1	B	Switching	Diesel-Elec.	160,000	550	August	Feb. '53	G. E.-Cummins
T. J. Moss	1	B	Switching	Diesel-Elec.	50,000	150	March	Jan. '53	G. E.-Cummins
McLouth Steel Corp.	1	B-B	Switching	Diesel-Elec.	196,000	600	October	.....	Electro-Motive
Nath. Ind. Maint.	1	B-B	Switching	Diesel-Elec.	160,000	550	October	May '53	G. E.-Cummins
National Tube Co.	1	B+B	Switching	Diesel-Elec.	100,000	300	January	July	G. E.-Cummins
New York & Pennsylvania Co.	1	B-B	Switching	Diesel-Elec.	130,000	550	January	Jan. '53	G. E.-Cummins
New York Electric & Gas	1	B-B	Switching	Diesel-Elec.	90,000	300	February	December	G. E.-Cummins
New York Shipbuilding Corp.	1	B	Switching	Diesel-Elec.	70,000	275	March	April	G. E.-Cummins
Niagara Mohawk Power Corp.	1	B-B	Switching	Diesel-Elec.	160,000	550	November	May '53	G. E.-Cummins
Ohio Power	1	B-B	Switching	Diesel-Elec.	130,000	550	April	May	G. E.-Cummins
Oliver Iron Mining Co.	2	2(B-B)	Transfer	Diesel-Elec.	465,000	1,600	March	.....	Electro-Motive
	4	B-B	Switching	Diesel-Elec.	198,500	800	April	October	Baldwin-West.
Petoskey Cement	1	B	Switching	Diesel-Elec.	50,000	150	August	Jan. '53	G. E.-Cummins
Phelps Dodge Corp.	4	B-B	Rd.-Sw.	Diesel-Elec.	249,000	1,500	January	.....	Electro-Motive
Philadelphia Gas Co.	1	B	Switching	Diesel-Elec.	50,000	150	September	Feb. '53	G. E.-Cummins
Phillips Chemical Co.	1	B-B	Switching	Diesel-Elec.	160,000	550	September	Dec. '53	G. E.-Cummins
Reserve Mining Co.	2	B-B	Switching	Diesel-Elec.	246,000	800	February	.....	Electro-Motive
Sanitary District of Chicago	3	B-B	Switching	Diesel-Elec.	196,000	600	April	.....	Electro-Motive
Semet-Solvay Co.	1	B-B	Switching	Diesel-Elec.	190,000	660	March	May	G. E.-Cooper-Bess.

Other Orders—For Service in the United States (cont.)

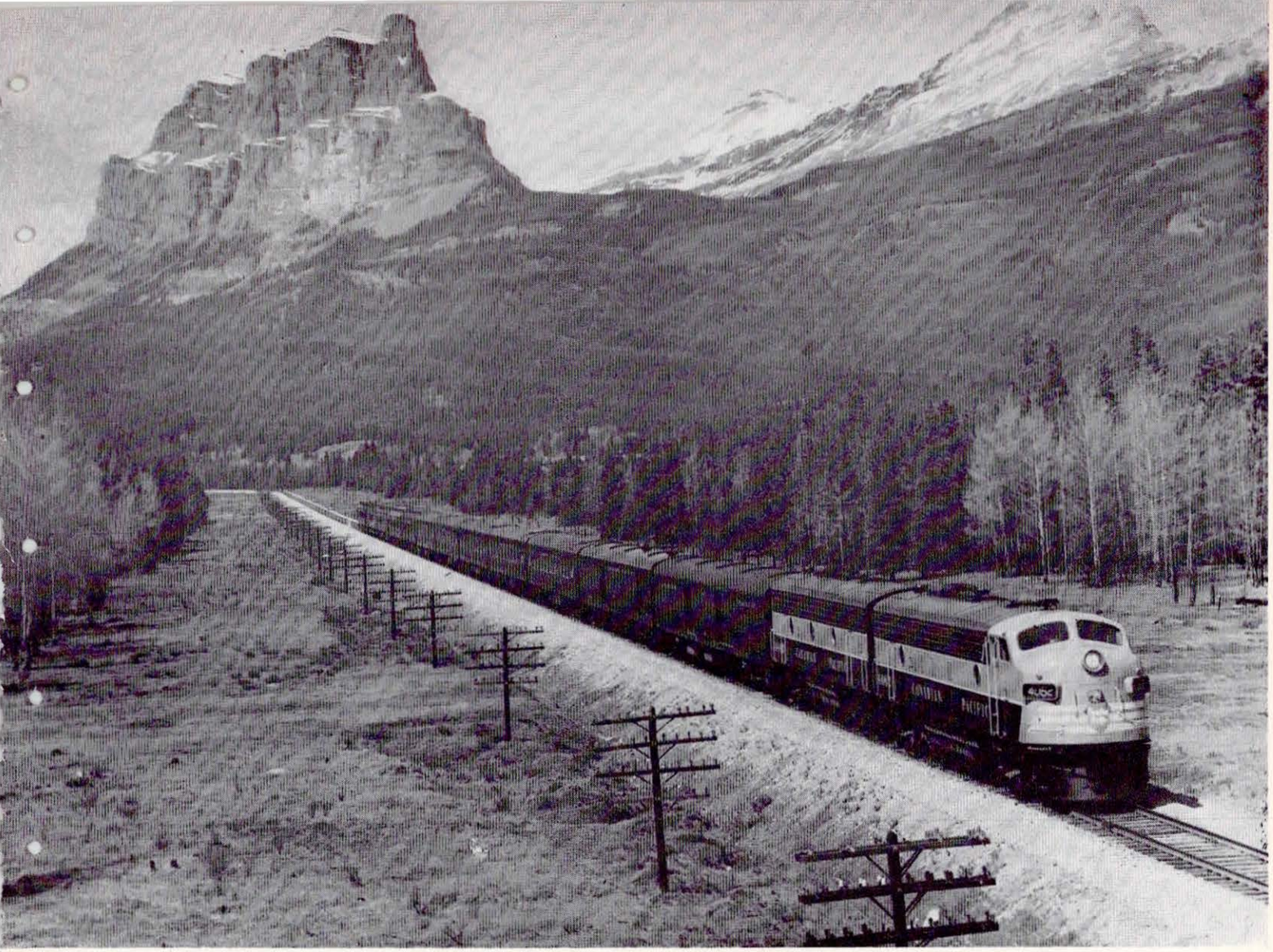
Southwest Stone	1	B-B	Switching	Diesel-Elec.	130,000	550	June	June	G. E.-Cummins
Servtex Metal	1	B-B	Switching	Diesel-Elec.	130,000	550	June	June	G. E.-Cummins
Spencer Chemical Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	June	December	G. E.-Cummins
	1	B	Switching	Diesel-Elec.	50,000	150	August	September	G. E.-Cummins
Sun Shipbuilding & Dry Dock Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	May	Mar. '53	G. E.-Cummins
Taylor-Colquitt Co.	1	B-B	Switching	Diesel-Elec.	90,000	300	September	Mar. '53	G. E.-Cummins
Tennessee Coal, Iron & R. R. Co.	1	B	Switching	Diesel-Elec.	100,000	300	October	Oct. '53	G. E.-Cummins
	2	B	Switching	Diesel-Elec.	70,000	275	October	June	G. E.-Cummins
Tennessee Product & Chemical Corp.	2	B-B	Switching	Diesel-Elec.	130,000	550	July	December	G. E.-Cummins
Tennessee Valley Authority	3	B-B	Switching	Diesel-Elec.	160,000	550	May	1952-53	G. E.-Cummins
	2	B-B	Switching	Diesel-Elec.	160,000	550	November	June '53	G. E.-Cummins
Timken Roller Bearing Co.	1	B-B	Switching	Diesel-Elec.	160,000	550	February	Mar. '53	G. E.-Cummins
U. S. Steel Co.	1	B	Switching	Diesel-Elec.	70,000	190	May	Feb. '53	Bald.-West.-Cummins
	1	B+B	Switching	Diesel-Elec.	130,000	550	August	December	G. E.-Cummins
Weirton Steel Co.	1	B-B	Switching	Diesel-Elec.	228,000	1,000	January	September	American-G. E.
	1	B	Switching	Diesel-Elec.	50,000	150	February	September	G. E.-Cummins
West Tacoma News Print	1	B	Switching	Diesel-Elec.	70,000	275	March	December	G. E.-Cummins
R. L. White	1	B	Switching	Diesel-Elec.	50,000	150	November	Feb. '53	G. E.-Cummins
Youngstown Sheet & Tube Co.	2	B-B	Switching	Diesel-Elec.	198,500	800	February	Feb. '53	Baldwin-West.

For Export

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder
Algoma Steel Corp. (Canada)	1	B-B	Switching	Diesel-Elec.	160,000	550	March	June	G. E.-Cummins
Aluminum Co. of Canada	1	B-B	Switching	Diesel-Elec.	130,000	380	August	Aug. '53	Bald.-West.-Cater.
American Smelting & Refining Co. (Canada)	1	B-B	Switching	Diesel-Elec.	150,000	600	February	December	Bald.-West.-Superior
Arabian American Oil Co.	2	B-B	Comb.	Diesel-Elec.	258,000	1,500	September	.....	Electro-Motive
Argentine State Rys.	51	C-C	Road	Diesel-Elec.	259,000	1,500	February	1954	Baldwin-West.
Benguet Consol. Mining (Philippines)	2	C	Switching	Hydraulic	70,000	190	September	Aug. '53	Bald.-West.-Cater
Cananea Consolidated Copper Co. (Mexico)	1	B-B	Switching	Diesel-Elec.	160,000	550	January	June	G. E.-Cummins
Centrales Delicas & Chaparra (Cuba)	3	B-B	Rd.-Sw.	Diesel-Elec.	100,000	450	March	Jan. '53	G. E.-Cater.
Chilean State Rys.	10	B-B	Switching	Diesel-Elec.	88,160	300	August	Sept. 53	G. E.-Cummins
	4	B+B	Switching	Diesel-Elec.	94,772	400	August	July '53	G. E.-Cater.
	30	C+C	Rd.-Sw.	Diesel-Elec.	141,056	660	August	Aug. '53	G. E.-Cooper-Bess.
	5	B-B	Rd.-Sw.	Diesel-Elec.	144,362	660	August	Oct. '53	G. E.-Cooper-Bess.
	12	C-C	Freight	Diesel-Elec.	231,420	1,600	August	Jan. '54	American-G. E.
Cia. Combustibles Agujita (Mexico)	1	B-B	Switching	Diesel-Elec.	100,000	300	May	Jan. '53	G. E.-Cummins
Consolidated of Cuba	6	B1B-B1B	Road	Diesel-Elec.	248,000	1,600	May	Mar. '53	American-G. E.
	1	B-B	Road	Diesel-Elec.	139,000	600	August	August	G. E.-Cooper-Bess.
	5	B-B	Road	Diesel-Elec.	170,000	800	May	Mar. '53	American-G. E.
	5	B-B	Road	Diesel-Elec.	170,000	800	May	Mar. '53	American-G. E.
Consolidated Sand & Gravel (Canada)	1	B	Switching	Diesel-Elec.	50,000	150	February	June	G. E.-Cummins
Cuban Sugar	1	B-B	Rd.-Sw.	Diesel-Elec.	140,000	600	February	March	G. E.-Cooper-Bess.
Dominican Sales (Cuba)	1	B-B	Rd.-Sw.	Diesel-Elec.	88,000	400	January	March	G. E.-Cater.
Falconbridge Nickel Mines (Canada)	1	B-B	Switching	Diesel-Elec.	160,000	550	May	Mar. '53	G. E.-Cummins
French North African Rys.	2	C-C	Switching	Diesel-Elec.	216,000	1,350	1952	June '53	Bald.-West.-Superior
General Supply Co. of Canada	1	B	Switching	D-Hyd.	40,000	135	May	Mar. '53	Bald.-West.-Cater.
Haitian Purchasing Corp.	1	B-B	Switching	Diesel-Elec.	88,000	270	April	Feb. '53	Bald.-West.-Cummins
Harbour Board (Canada)	1	B-B	Switching	Diesel-Elec.	160,000	550	March	May	G. E.-Cummins
Highway Paving (Canada)	1	B-B	Switching	Diesel-Elec.	184,000	660	February	March	G. E.-Cooper-Bess.
International Nickel Co. of Canada	1	B-B	Switching	Diesel-Elec.	100,000	300	February	Jan. '53	G. E.-Cummins
El Melon (Chile)	1	B+B	Switching	Diesel-Elec.	94,000	400	February	Apr. '53	G. E.-Cater.
North Western Ry. (Pakistan)	10	B-B	Rd.-Sw.	Diesel-Elec.	152,000	600	June	Sept. '53	G. E.-Cooper-Bess.
Parana-Santa Catharina Ry. (Brazil)	5	C-C	Comb.	Diesel-Elec.	325,000	1,600	May	Mar. '53	Baldwin-West.
	5	C-C	Rd.-Sw.	Diesel-Elec.	220,000	1,600	June	1954	American-G. E.
Rhoana Corp. (South Africa)	2	B-B	Switching	Diesel-Elec.	130,000	550	November	Sept. '53	G. E.-Cummins
Royal Canadian Air Force	1	B-B	Switching	Diesel-Elec.	100,000	300	March	December	G. E.-Cummins
Santos Docks	2	B-B	Switching	Diesel-Elec.	90,000	300	February	Jan. '53	G. E.-Cummins
South Porto Sugar Co.									
For the Dominican Republic	1	B-B	Rd.-Sw.	Diesel-Elec.	140,000	600	February	December	G. E.-Cooper-Bess.
For Puerto Rico	1	B-B	Rd.-Sw.	Diesel-Elec.	88,000	400	April	April	G. E.-Cater.
United Rys of Havana	2	B-B	Switching	Diesel-Elec.	198,500	800	February	June	Baldwin-West.
Vale do Rio Doce (Brazil)	2	C-C	Rd.-Sw.	Diesel-Elec.	220,000	1,600	July	1954	American-G. E.
A. T. Williams for Durban Refining (South Africa)	1	B-B	Switching	Diesel-Elec.	130,000	380	February	Mar. '53	Bald.-West.-Cater.

Canada

Purchaser	No.	Wheel Arrangement	Service	Type	Weight Lb.	Horsepower	Date of Order	Date of Delivery	Builder
Algoma Central & Hudson Bay	1	B-B	Switching	Diesel-Elec.	230,000	800	March	April	G. M. Diesel, Ltd.
	2	B-B	Freight	Diesel-Elec.	248,000	1,500	August	December	G. M. Diesel, Ltd.
Algoma Steel Corp.	1	B-B	Switching	Diesel-Elec.	230,000	800	April	June	G. M. Diesel, Ltd.
Canadian National	4	A1A-A1A	Rd.-Sw.	Diesel-Elec.	.....	1,200	March	September	Canadian Locomotive
	20	B-B	Freight	Diesel-Elec.	.....	1,600	August	Jan. '53	Canadian Locomotive
	10	B-B	Freight	Diesel-Elec.	.....	1,600	August	Jan. '53	Montreal Locomotive
	22	B-B	Switching	Diesel-Elec.	.....	660	August	Jan. '53	Montreal Locomotive
	40	B-B	Freight	Diesel-Elec.	248,000	1,500	August	Jan. '53	G. M. Diesel, Ltd.
	6	C-C	Rd.-Sw.	Diesel-Elec.	248,000	1,200	August	Mar. '53	G. M. Diesel, Ltd.
Canadian Pacific	10	B-B	Freight	Diesel-Elec.	248,000	1,500	May	1952	G. M. Diesel, Ltd.
	4	B-B	Freight	Diesel-Elec.	248,000	1,500	August	.....	G. M. Diesel, Ltd.
	14	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	August	.....	G. M. Diesel, Ltd.
	6	B-B	Switching	Diesel-Elec.	248,000	1,200	August	.....	G. M. Diesel, Ltd.
	4	B-B	Road	Diesel-Elec.	.....	1,600	1952	.....	Montreal Locomotive
	16	B-B	Freight	Diesel-Elec.	.....	1,600	1952	.....	Montreal Locomotive
	4	B-B	Switching	Diesel-Elec.	.....	1,000	1952	.....	Montreal Locomotive
	5	B-B	Switching	Diesel-Elec.	.....	660	1952	.....	Montreal Locomotive
	10	B-B	Freight	Diesel-Elec.	.....	1,600	1952	.....	Canadian Locomotive
	12	B-B	Freight	Diesel-Elec.	259,000	1,600	1952	1952	Canadian Locomotive
Dominion Foundries & Steel	1	B-B	Switching	Diesel-Elec.	230,000	800	June	June	G. M. Diesel, Ltd.
Dominion Iron & Steel	2	B-B	Switching	Diesel-Elec.	230,000	800	February	April	G. M. Diesel, Ltd.
Ontario Northland	8	B-B	Frt.-Pass.	Diesel-Elec.	248,000	1,500	March	June	G. M. Diesel, Ltd.
Pacific Great Eastern	2	B-B	Switching	Diesel-Elec.	240,000	1,600	March	July	Montreal Locomotive
Toronto, Hamilton & Buffalo	3	B-B	Rd.-Sw.	Diesel-Elec.	248,000	1,500	December	.....	G. M. Diesel, Ltd.



Continuing its program of dieselization by divisions, the Canadian Pacific in 1952 replaced steam power with diesels between Calgary, Alta., and Revelstoke, B.C. This year additional mountain territory will be dieselized.

Canadian Railways Battle Rising Costs

Higher wages and material prices put CNR and CPR in "anomalous situation" of realizing less net from handling more traffic at higher rates — Physical improvement continues at rapid pace

By OUR CORRESPONDENT AT OTTAWA

Extensive construction of new lines into hitherto undeveloped territory; intensive development of older systems; and continuation, by the latter, of efforts to keep their revenues ahead (or at least abreast) of the rapidly mounting expenses growing out of a rapidly expanding national economy—these were the three fields of activity which dominated the Canadian railroad scene throughout 1952.

From the standpoint of Canadian railroading as a whole, the last was the most important of the three—so much so that it occupied first place in the year-end statements of the heads of both of the Dominion's major rail systems. Concerning it, Donald Gordon, chairman and president of the Canadian National, said:

"Industrial development which, during the past five or six years has done so much to strengthen the Canadian economy, has at the same time created an anomalous situation for Canada's railways. This was evident in 1952 and promises to be just as marked during the coming year.

"The continuing surge of business expansion has been accompanied by an increase in freight tonnage hauled over Canadian lines. Each year since 1946 has seen new records set in gross revenues but net revenues, with the exception of one year, have steadily declined in percentage terms. Mounting costs, which have outstripped increased revenues, are of course the reason for this seem-

ing paradox. Between 1945 and 1951 gross revenues rose by 44 per cent while operating costs increased by 64 per cent. . . . This trend is continuing. . . .

"Our problem is to obtain a reasonable balance between revenues and expenses, and the current situation in this respect is not a happy one. The CNR is the biggest industrial buyer of materials in the country, and last year we again had to pay substantially higher prices for our supplies. . . . The railways have just concluded an agreement with their non-operating employees . . . the main provisions of which call for a wage increase of seven per cent plus seven cents an hour, effective September 1. This will increase our wage costs by nearly $30 million annually. . . . An additional $4 million, on an annual basis, has been added to our wage bill as the result of new agreements signed earlier this year with our enginemen and conductors. Settlements have not yet been reached with the trainmen and firemen."

In substantially similar language, W. A. Mather, president of the Canadian Pacific, declared that:

"Despite the high level of business and industrial activity in Canada during 1952, financial results of Canadian Pacific's railway operations again left much to be desired. The unprecedented flow into Canada in the first few months of 1952 of investment capital from the United States and abroad, the tense international situation calling for diversion of a substantial part of the country's productive effort to defense needs, and other factors, combined to push material costs and wages upward to the extent that net earnings on railway operations were still inadequate to provide a fair return on the large investment in railway property.

"The record 1952 western grain harvest, coupled with a carry-over of part of the 1951 crop; brisk activity in development of the country's natural resources . . .; the growing output of farms, fisheries and manufacturing plants; and unabated activity in the construction trades, resulted in substantially increased demands upon the country's railway facilities.

"Notwithstanding this high level of industrial and agricultural output, and the resulting increase in ton-miles of freight carried, the CPR and other railways were nevertheless compelled to seek financial relief from the burden of mounting material and wage costs through further applications to the Board of Transport Commissioners for increases in freight rates."

"New Record" in Rate Cases

Disposition of these applications, it has been said, "probably established a new record" with the board. They won for the railways a 17 per cent increase in January 1952, and a 9 per cent increase in December; the latter immediately followed, and was designed approximately to offset, the wage settlement with non-operating employees referred to by Mr. Gordon. On the other hand, the board, in October, rejected the first 8 per cent of another 17 per cent increase sought by the railroads in July; the remaining 9 per cent on this application was still pending at the year's end.

The Canadian Pacific, in addition, applied to the board in July for establishment of a "rate-base rate-of-return" formula under which it "would be given the opportunity of earning" up to 6½ per cent on its net capital investment of $1,146,000,000 in railway property. "Such an approach," said Mr. Mather, "offers the only effective solution to a financial problem of growing concern not only to the railways but to the country at large." It is needed, he declared, to establish "a sound financial position assuring both a fair return to the company's shareholders on their investment, and an ability to obtain necessary capital required for development and expansion of its transportation facilities."

The proposal, like most of the rate increase applications, brought protests from the western provinces, whose governments suggested that it was "a plan to have shippers, through higher freight rates, underwrite the CPR." The traditional position of the western people, predominantly dependent upon sure outlets for their grain and live stock, and now their oil, has been that the provinces of Ontario and Quebec need not worry much about higher rates because they have quick recourse to highway and water as alternative transport means, but that in the West these competitive factors are absent.

Chairman John D. Kearney, of the Transport Board, also seemed critically inclined toward some of the railways' requests for higher rates, particularly in the board's October decision rejecting the July application for an 8 per cent raise. At that time he pointed out that in January the board awarded the railways a rate boost of 17 per cent. Five months later, they asked for 8 per cent more. The reason given in argument was that the earlier increase would fall short of producing net earnings for the CPR of $46,644,000, so the railway was asking for a further increase to insure that result.

Answering this argument Chairman Kearney stated: "The authorization of a level of freight rates which make it possible for the railways to earn a stipulated net income does not in any case imply a guarantee that such net income will be realized, nor does it imply that if it is not realized the board will by reason of that fact authorize the railways to raise the level of rates to make good the deficiency."

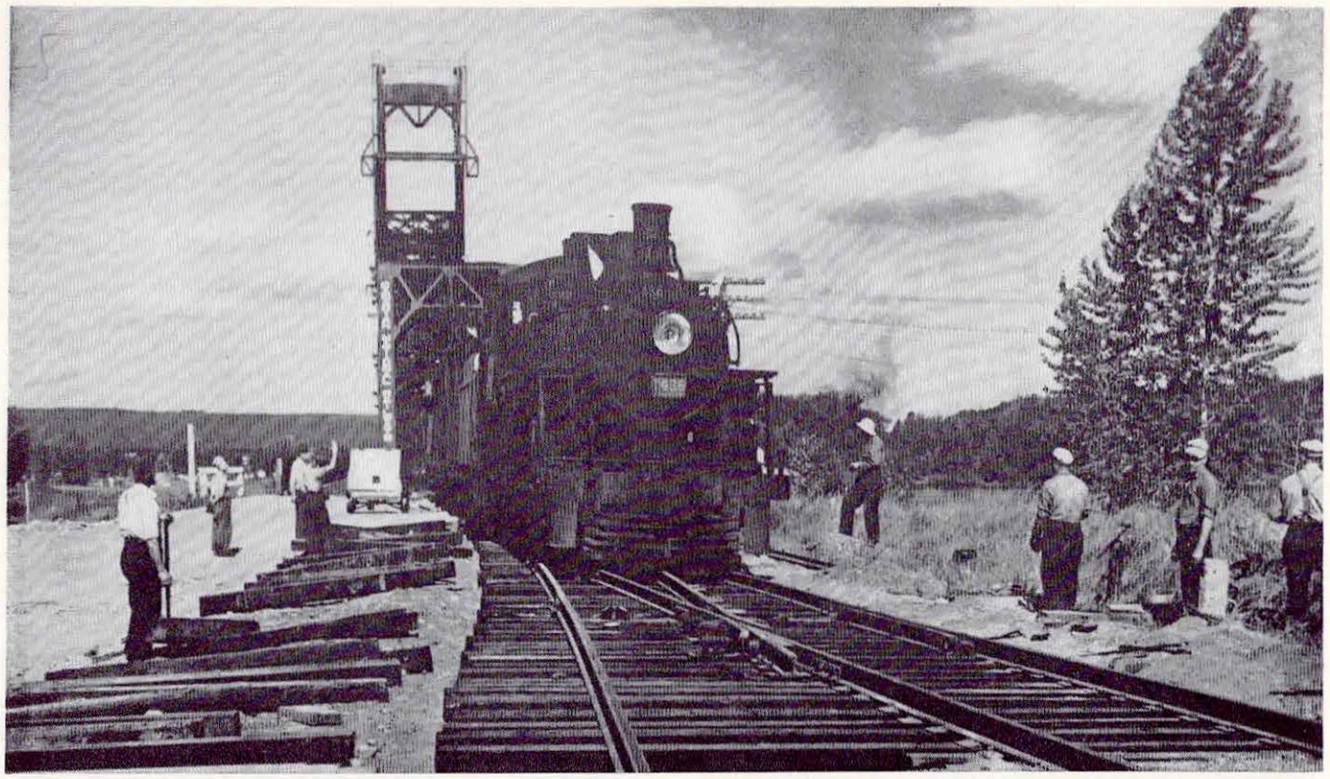
He declared that instead of a guarantee it should be regarded as the setting of a possible goal, and later asserted that the CPR "on their own pleadings indicate the board has in its previous judgment made adequate provision for operating expenses, fixed charges, usual dividends and a realizable surplus far in excess of the average surplus attained in immediately preceding years." But he hinted that if the railways were faced with "altered circumstances in the interim or before the end of the year" consideration might have to be given to a change in the rate level. While he did not suggest that the railways should not apply oftener than once a year for higher freight rates, he did appear irked at the coming of a second application five months after the 17 per cent award, and declared it was based on narrow grounds.

In the face of the critical attitude shown by the provinces and the board, the railways have been conducting a "campaign of education," telling shippers and taxpayers the extent of the rail investment in the nation's economy, what it costs to run a railroad, and how little cash is left at the end of a year.

Wages a Major Factor

Meantime, the Canadian railroad employees, whose demands for higher wages have been a major factor in the railways' higher operating costs, seem to be trying to regain the wage parity with railroaders in the United States which prevailed from 1918 to 1922. The Conciliation Board which passed on the "non-ops'" demands last fall gave close attention to their claim for such parity. But it pointed out that since 1922 freight rates in the U. S. have risen "about 79 per cent," with wages being closely related thereto. In Canada, there was no change in general freight rates from 1922 to 1948, while wages rose, in one way or another, in 1941-1943, 1944, 1946, 1948, 1950, 1951 and 1952; rates went up only in 1949, 1950 and 1952.

Another point made by the Conciliation Board chair-



A link completed! After more than 30 years, the Pacific Great Eastern's 82.5-mile Prince George extension now joins that heretofore isolated system with Canada's rail network through this switch in the Canadian National's Prince Rupert line at this Fraser River bridge. A detailed account of this long-projected extension—the PGE's first contact with the "outside railroad world"—appeared in the Canadian issue of *Railway Age*, July 7, 1952.

man in meeting the demand for pay equality with the United States was that "the smaller domestic market for many (Canadian) products, together with the greater dependence on outside markets for disposal of so much of its product, creates of itself a fundamental difference in the economy of Canada when compared with the United States, and provides an explanation for the higher wage level in the United States."

While the board majority conceded the check-off formula for union dues, it opposed the demand for the union shop; in his argument Chairman Justice R. L. Kellock pointed to a legal inconsistency which is likely to lead to Parliamentary action. In their union shop proposal the rail employees would obligate the railways the require from their employees an agreement to join a particular union, an agreement which, Justice Kellock says, by virtue of the relevant provision in the union constitution, involves an undertaking not to join any other union; it obligates the railways to discharge such employees if they refuse. Justice Kellock says this virtual denial to the employee of the right to choose the union to which he shall belong is prohibited by the Industrial Disputes Investigation Act, one of the outstanding pieces of labor legislation put on Canadian statute books at the instance of former Prime Minister Mackenzie King. As the point was raised by a member of the Supreme Court of Canada it cannot be lightly dismissed, and it is likely that a move will be made to adjust this anomalous position.

Intensive Development Continues

Despite their cost and rate difficulties, Canadian railways continued throughout 1952 the program of intensive physical development on which they have spent some $3¾ billion since 1940.

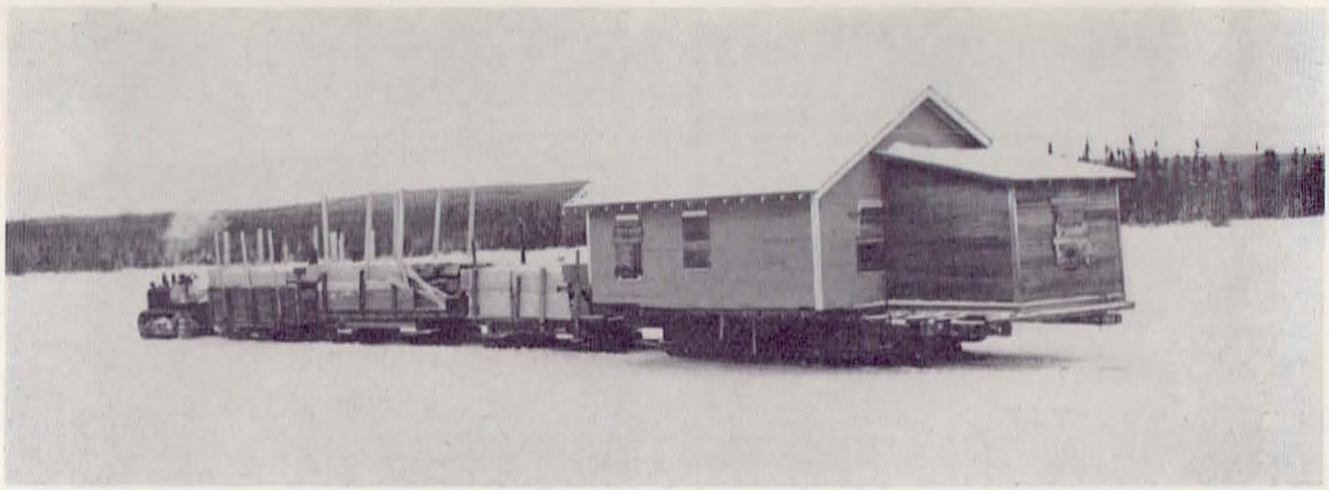
On the CPR, a fleet of the most powerful diesel-electric locomotives ever used in Canada replaced steam power between Calgary and Revelstoke. In 1953, diesels will replace steam power between Crowsnest, on the Alberta border, and Hope, B. C., where the southern route joins the main line. This development necessitates a modern diesel repair shop at Nelson, B. C., and construction is now in progress.

Five thousand six new freight cars were ordered from builders in 1952, including six specially designed depressed center flat cars for handling electric transformers and other equipment of extraordinary weight and size. Orders for 40 new steel suburban coaches were placed for delivery in 1953. A Teletype system of communication is progressively being installed, with all principal points between Fort William and Vancouver linked up by Teletype last year.

On the CNR, there were placed in service in 1952 7,310 units of new freight equipment and 31 units of new passenger-train equipment. Orders were placed for 300 new passenger-train cars and 3,730 freight cars, for delivery over the next two or three years. The roster of diesel locomotives increased by 116, put into service "where their use makes possible substantial economies in operation." There are 52 additional units on order for delivery in 1953, and the diesel training program for employees "is making good progress."

Major construction projects, exclusive of new lines, include loading facilities at Prince Rupert for barges operating on the Pacific Coast; new wharves and facilities at North Sydney and Port-aux-Basques for the Newfoundland ferry service; additional trackage and yard facilities in Montreal and Toronto, and the new Bonaventure freight terminal in Montreal.

Following a plebiscite in North Vancouver, the CNR acquired a new deep sea outlet. For the first time, it is in position to reach the harbor front at Vancouver with its own power, as a result of having acquired railway



On the Canadian National's new 155-mile line from Sherridon, Man., to Lynn Lake, rails have been laid from Sherridon to the Churchill river. Two of the three steel bridges required to cross the Churchill have been erected and the third is under construction. It is expected that grading and clearing now in progress between the river and Lynn Lake will make it possible to put the new line into operation next fall, as scheduled. As shown in the upper picture, most of the equipment, supplies and housing for construction forces have been hauled in by tractor during winter months, because of the inaccessibility of the territory—except by air—during the summer season.

facilities of the National Harbours Board and the Second Narrows bridge.

Also in the nature of intensive development, were the CNR's financial reorganization, and the increasing activity manifested by both major railroads toward meeting highway competition on its own grounds. Concerning these, Mr. Gordon said:

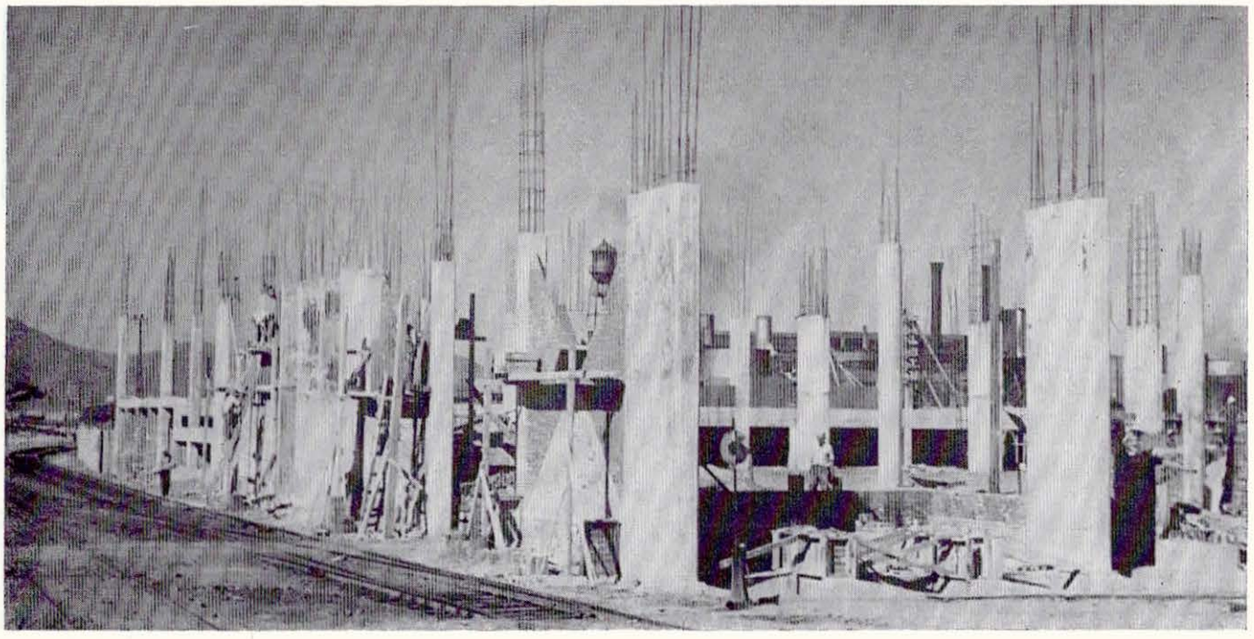
"Whatever the final result for 1952 may be, the Canadian National will present quite a different financial picture to the public than in any other year. This results from the Canadian National Railways Capital Revision Act, 1952, which altered the company's capital structure so that, for the first time in our history, our fixed interest charges bear a reasonable relationship to earning power. It is important to note that the Capital Revision Act did not write off any of the money invested in the railway, nor did it guarantee the system against income deficits, irrespective of the relationship between rate and cost levels.

"Competition from highway carriers was further intensified during the year. We are studying this problem closely because it is recognized as one of national concern. Measures taken as a result of these studies include adoption of agreed charges and rate reductions, and extension of railway owned and operated bus and truck services where it was found that we could supplement railway operations and give a better service to certain areas. The introduction [by both CNR and CPR] of railway-highway freight service between Montreal and Toronto represented a further step toward meeting truck competition. In the new experimental service, railway owned truck-trailers are loaded and placed on specially designed flat cars for rail transport between the two points and the goods are delivered by truck at destination."

New Construction

The third major field of activity in 1952 Canadian railroading was the construction or extension of steel into previously undeveloped areas, a development thoroughly reviewed in *Railway Age's* special Canadian issue of July 7, 1952.

Longest of these new lines is the 360-mile Quebec, North Shore & Labrador, on which iron ore from the new Labrador fields is scheduled to be moving to tidewater at Seven Islands, Que., by 1954. Next in size is the CNR's 155-mile branch from Sherridon, Man., to Lynn Lake (see accompanying illustrations). This is followed by the just completed 82-mile extension of the Pacific Great Eastern from Quesnel, B. C., to a connection with the CNR at Prince George, and by the 43-mile Terrace-Kitimat line of the CNR, on which a contract for clearing and grading has just been awarded.



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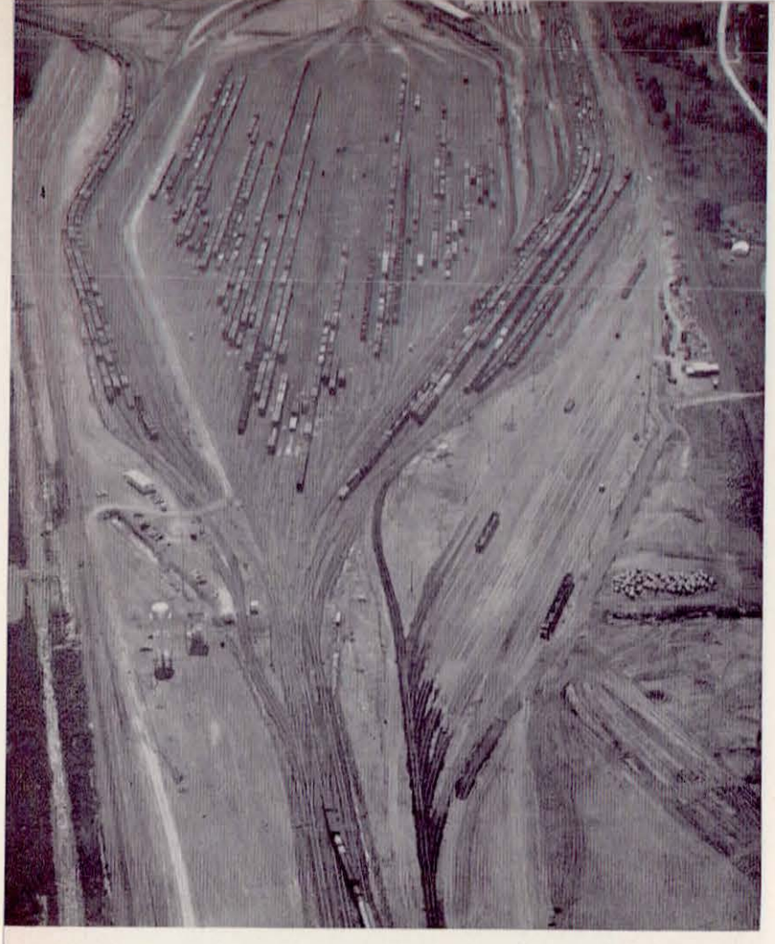

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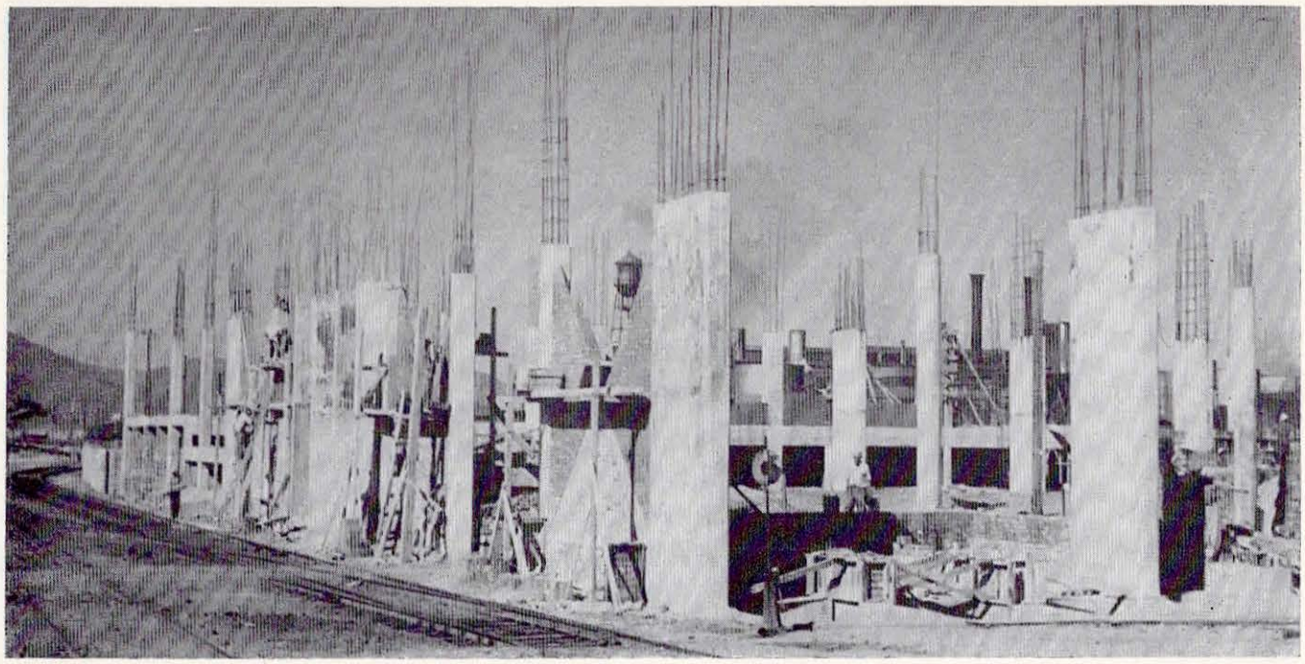
Thus, with all the major factors involved pointing to large construction programs, it was expected that reports of engineering officers to *Railway Age* would indicate that construction work under way during 1952 would exceed that in progress in 1951. Confirming this expectation, these reports indicate that projects underway in the 12 major categories listed in an accompanying table will have cost, when completed, a total of about $542,217,000. In addition, other projects were reported under way at an estimated cost of more than $297,000,000, although the specific information needed to permit these projects to be classified was not available. These figures do not include authorizations for



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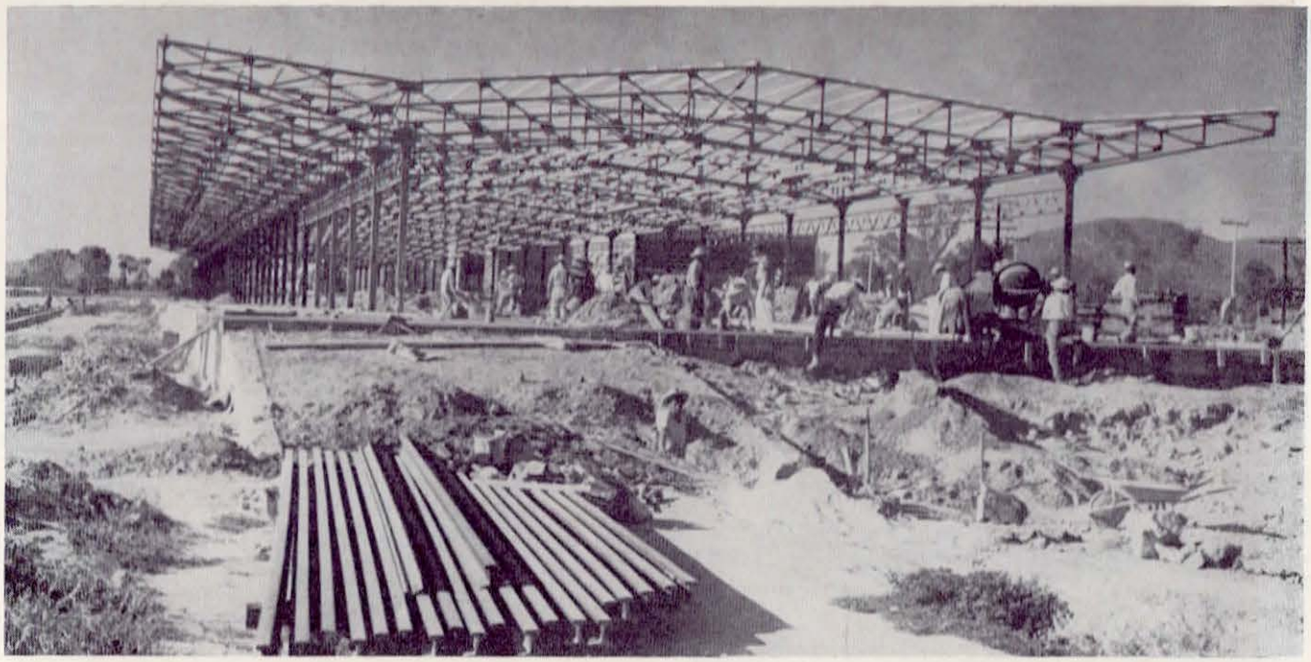

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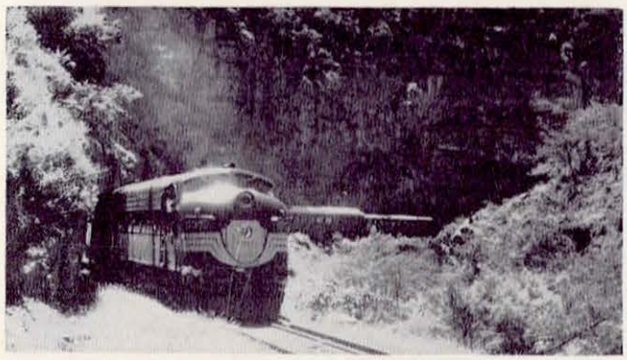

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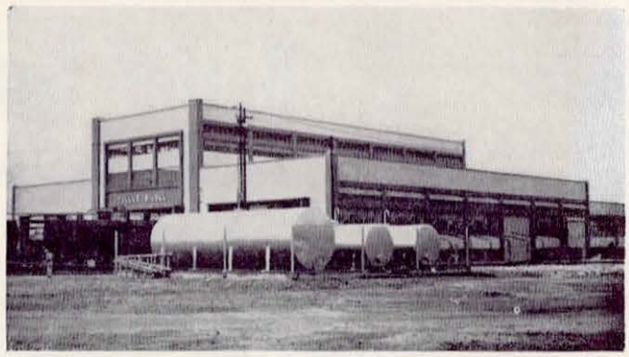

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Total expenses of the National system in the first nine months of 1952—481 million pesos—represented a 3.9 per cent increase over 1951. In view of the 10.5 per cent rise in total revenue, the ability to carry through gross produced net income of more than 8 million pesos

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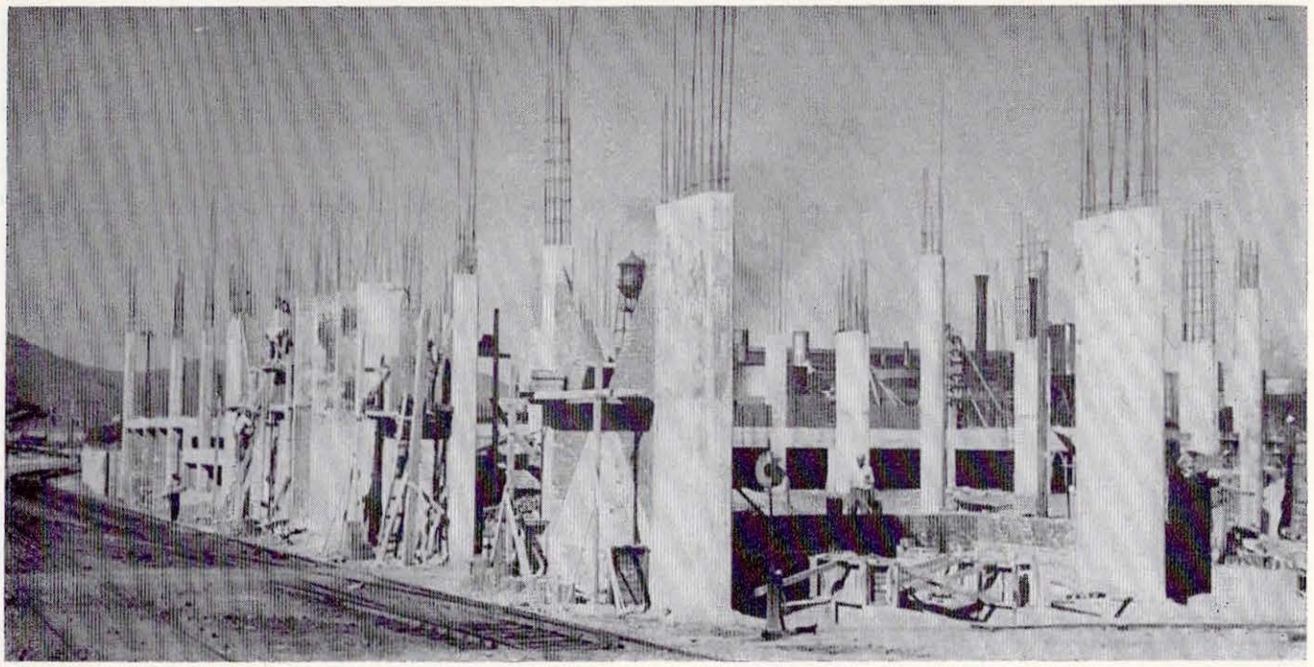

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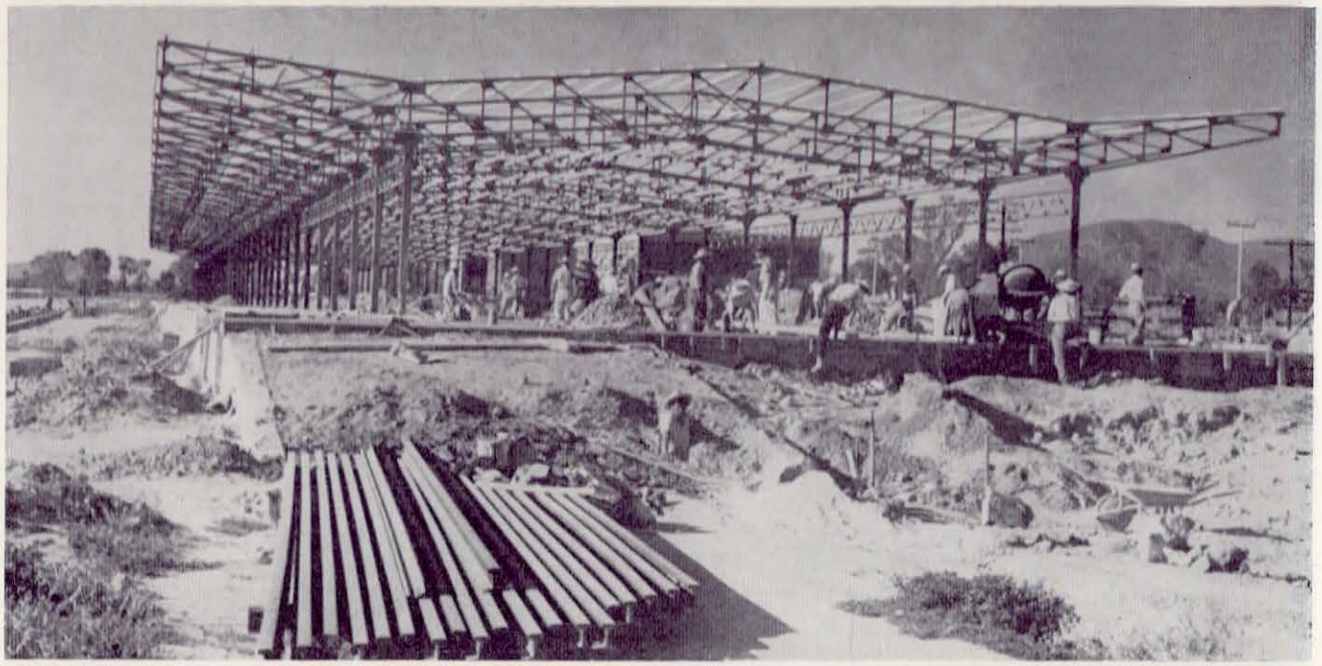

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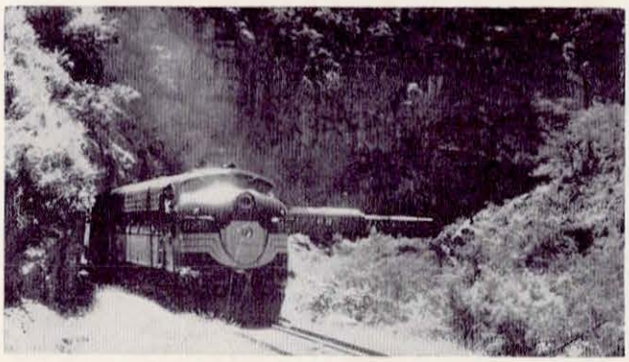

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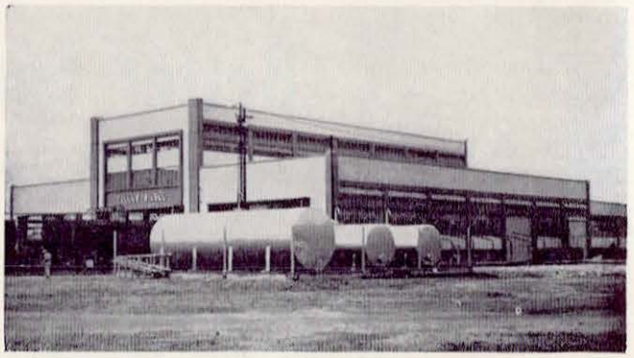

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for the first three quarters of 1952. This contrasts with a deficit of 21 million pesos in the same period of 1951. Unit costs decreased. The cost of producing a revenue ton-kilometer decreased from 6.115 cents (Mexican currency) during the January-August period of 1951 to 5.509 cents in the same period of 1952.

Why Costs Dropped

This first break in the trend over a long period of continuously rising costs is the result, *first*, of the nature itself of railroads as a "decreasing cost" industry (proportionate to traffic levels) and, *second*, of the expanded dieselization of operations. During 1952 (9 months) 42 per cent of total gross ton-kilometers handled in freight trains and 38 per cent of all car-kilometers in passenger trains were moved with diesel power.

This is how the National Railways of Mexico were able to handle 12.2 per cent more freight traffic (passenger traffic remaining at approximately the same level) with only 3.2 per cent more transportation expense.

Higher efficiency in the use of manpower and materials is shown in the accompanying operating statistics.

Besides the aforementioned 39 diesel-electric locomotives received during the latter part of 1951, four large industrial organizations in Mexico—in an effort to increase the capacity of transportation plant on which business depends—bought 16 additional diesel locomotives for railroad service. These will become the property of the railways not later than five years after the acquisition date. Repayment to the industrial firms is made through a 10 per cent reduction on freight bills whenever the locomotive buyer is the shipper or the consignee. In a similar way, a large mining concern acquired—during the months of June, July and August 1952—100 new gondolas which will be paid for by the railways through a per diem charge of one U.S. dollar.

New Equipment

Three hundred gondolas bought directly by the National from the Magor Car Corporation are about to be received. Eleven first class passenger coaches were delivered in March by Pullman-Standard. Purchase of these cars was financed by Eximbank through a $51 million loan. During 1951 the Bank of Mexico and the Mexican federal government established a credit on behalf of the National Railways to cover the purchase of 57 passenger units in Switzerland from Schindler Wagon & Carriage Co., and 50 more from the French firm, Enterprises Charentaises. Thirty-two of the Schindler units are luxury coaches for the 800-mile run between Mexico City and Laredo, Tex. The other coaches are so-called first class, standard equipment. Up to December 5, 1952, 20 of the Schindler coaches had been receixed in Mexico.

The track rehabilitation program of the National—financed to a large extent by the Eximbank $51 million loan, as far as rail and rail accessories are concerned—is nearing completion. After the Mexico City-Laredo line was laid wholly with 112-lb. rail by September 1951, similar work was performed on the Tampico-San Luis Potosi line (276 miles) and on Tampico-Monterry line (317 miles), where 112-lb.rail has also been laid in substitution for the existing light rail. On November 19, rail change-out on the entire stretch from San Luis Potosi to Tampico was finished, while, on the same date, 234 miles of the other line had been laid with heavy rail. The remaining 25 miles from Tampico north and 58 miles out of Monterrey were expected to be completed before the end of 1952, or, if not, early in 1953.

SELECTED OPERATING STATISTICS

(First Nine Months 1952-1951)

	1952	1951	Percent Change
Revenue tons carried	12,508,750	11,347,232	+10.24
Revenue ton-kilometers (000's)	6,127,978	5,461,601	+12.20
No. freight trains run	84,766	87,760	— 3.4
Freight train-kilometers	13,348,342	13,538,447	— 1.4
Gross ton-kilometers per train-kilometer	1,148	928	+23.7
Net ton-kilometers per train kilometer	550	466	+18.0
Gross ton-kilometers per train-hour	18,934	16,923	+11.9
Car-kilometers per car per day*	52.3	47.7	+ 9.6
Net ton-kilometers per car per day*	1,152	1,053	+ 9.4

*Serviceable cars only. Cars needing light (yard) repairs are considered in the National Railways as "serviceable", resulting in a somewhat low efficiency figure.

Using the best salvage from these lines, the route extending from Ixtepec to Suchiate on the Guatemalan border, was equipped with 85-lb. rail to replace old 50, 55 and 60-lb. rail. The line running from Mexico City southeasterly to Puebla and thence to Oaxaca, built narrow-gage at the end of the 19th century, was recently widened to standard gage. The first standard-gage train ran thereon on August 19.

This was the third major gage-widening job done on the system. The first was the line from Mexico City to Veracruz—converted in 1947. The second one—standardized during 1948—was the line from Mexico City to Acambro, a part of the original narrow-gage route to Laredo.

These improvements yielded highly encouraging results. Freight traffic on the Mexico City-Veracruz line during the first eight months of 1952 was 134 per cent above the average of the last three years of narrow-gage operation. At present, the system maintains only 331 miles of narrow-gage track.

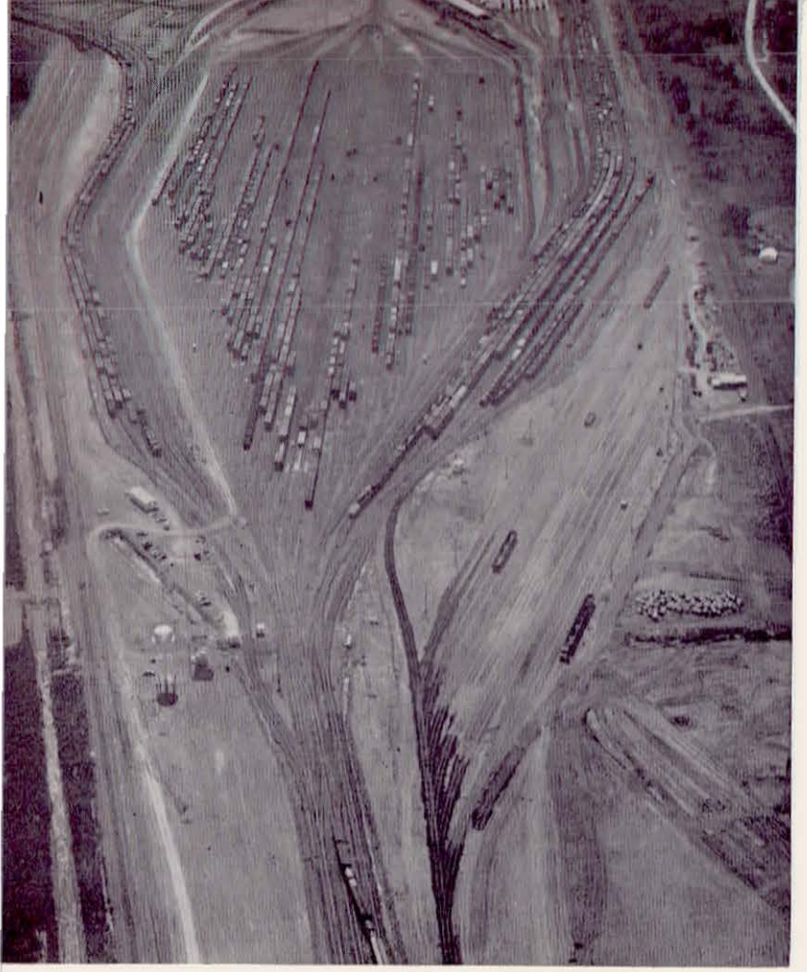
Preparatory work for rehabilitating the standard-gage lines extending from Irapuato to Guadalajara, 161 miles, and from Irapuato to Ciudad Juarez (opposite El Paso, Tex.), 1,004 miles, is practically complete so that new 112-lb. rail can be laid as soon as the Tampico-Monterrey stretch is finished.

A new passenger and freight terminal at Jalapa, capital city of the state of Veracruz, was officially inaugurated during October 1952, as was a new passenger station at Nuevo Laredo. Work on the new Mexico City freight and passenger terminals has progressed fast, as well as on new terminals at Guadalajara, Puebla and Monterrey.

New Administration

On December 1, Adolfo Ruiz Cortines took oath as Mexico's new constitutional president for a 6-year term, succeeding Miguel Aleman. The new government head appointed Senator Roberto Amorós as general manager of the National Railways of Mexico, succeeding Manuel R. Palacios, who had been top officer of the system as well as other government-owned railways in Mexico during the preceding six years.

Very likely the recent "softening" in the country's economic activity was partly the result of curbs put on government and private spending in anticipation of a change of regime. It is expected that general economic conditions will become normal by the end of the year or early in 1953, and that traffic, both freight and passenger, will again resume its record-breaking growth. New freight tariff went into effect on November 19, 1952, which, it is estimated, will yield added revenues at the rate of 153 million pesos a year, intended to help the National Railways pay for rehabilitation work done.



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CLASSIFICATION OF CONSTRUCTION WORK IN 1952

Construction Category	Total Estimated Cost	Estimated Amount Chargeable This Year	Estimated "Carry-Over"
New lines, additional tracks	$50,496,303	$24,269,690	$13,041,950
Revision of grade and alinement	26,480,772	16,844,539	6,316,780
Yards and terminals	160,057,116	58,662,733	46,571,247
Bridge work	79,717,069	23,532,236	21,390,520
Buildings			
Passenger stations	3,837,408	2,835,898	840,910
Freighthouses	8,201,644	3,198,883	2,935,253
Car shops	19,598,961	5,113,530	14,421,642
Other buildings	17,597,332	10,362,643	3,430,281
Locomotive shops and servicing facilities	63,416,023	20,028,271	13,809,775
Industrial tracks	32,927,837	20,023,662	6,557,767
Tunnels	8,026,772	3,052,740	702,678
Grade separations (Total cost)	71,859,746	8,532,208	28,590,802
Total	$542,216,983	$196,457,033	$158,609,605

signaling or centralized traffic control — construction categories that always rank very high in total expenditures. Combining these two groups of figures produces a grand total of more than $839,000,000 for additions and betterments underway during the past year.

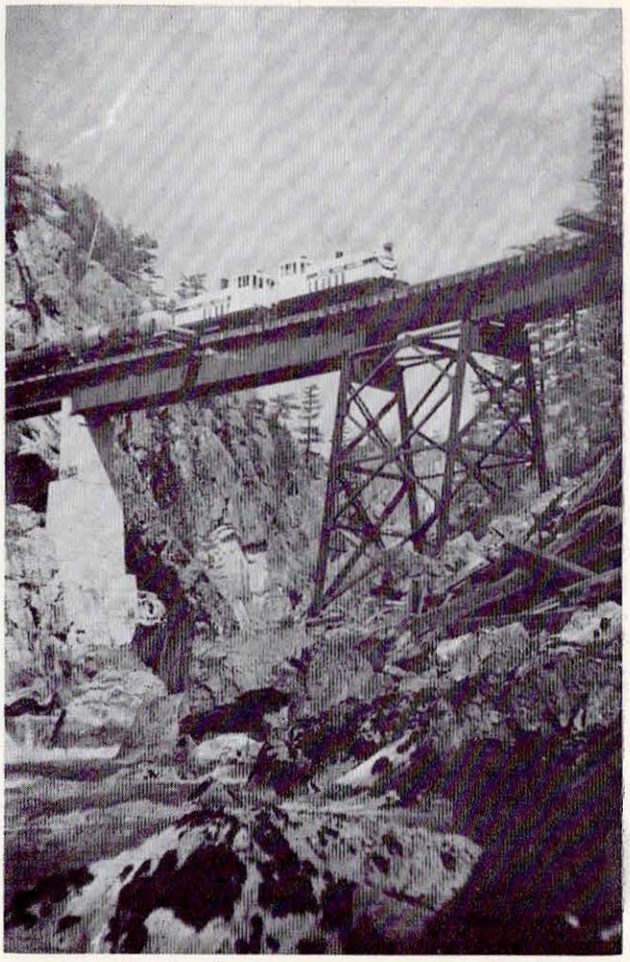
Improved Yards Mean Better Service

Yard and terminal improvement work again constituted the largest single category of additions and betterments in progress during the year. Railways which gave details of their construction work reported that such projects underway during the year will have cost more than $160,000,000 when completed. This was about $6,000,000 more than the cost of such projects during 1951. Yard construction or improvement projects under way during the year include such major terminals as the Radnor yard of the L&N at Nashville, Tenn. ($10.5 million); the Ernest Norris yard of the Southern at Birmingham, Ala. ($9.2 million); the Roseville yard of the Southern Pacific at Roseville, Cal. ($4.7 million); and the Milwaukee's Air Line yard at Milwaukee ($3 million).

Yard construction also promises to be the largest category of work in progress in 1953, partly because of a "carry-over," authorized for work not yet complete, of more than $46,000,000—the largest carry-over of any construction category reported by the railroads. This prediction is further enhanced by the Pennsylvania's announcement that it is starting to enlarge and modernize its Conway yard just west of Pittsburgh at an expenditure of $31,000,000. When completed in 1955, this yard will be able to classify over its two retarder-equipped humps as many as 8,000 cars per day, and will be one of the largest classification yards in the United States.

Although new lines and additional tracks constituted the second highest category of capital improvements made during 1951, they dropped to fifth place among the categories reported specifically to *Railway Age* for 1952. However, other major projects in this classification not so specifically reported—most of them in Canada —are known to be large enough to raise this total to more than $232,000,000.

Much of this type of construction work is of long duration and new lines are not reported as built until the projects are complete. This fact is reflected in an accompanying table which shows a relatively small mileage—only 116 miles—built in the United States in 1952, whereas large expenditures have been authorized for work in progress. Much of the mileage reported built, as might be expected, was connected with revisions of grade and alinement or with other relocation projects.



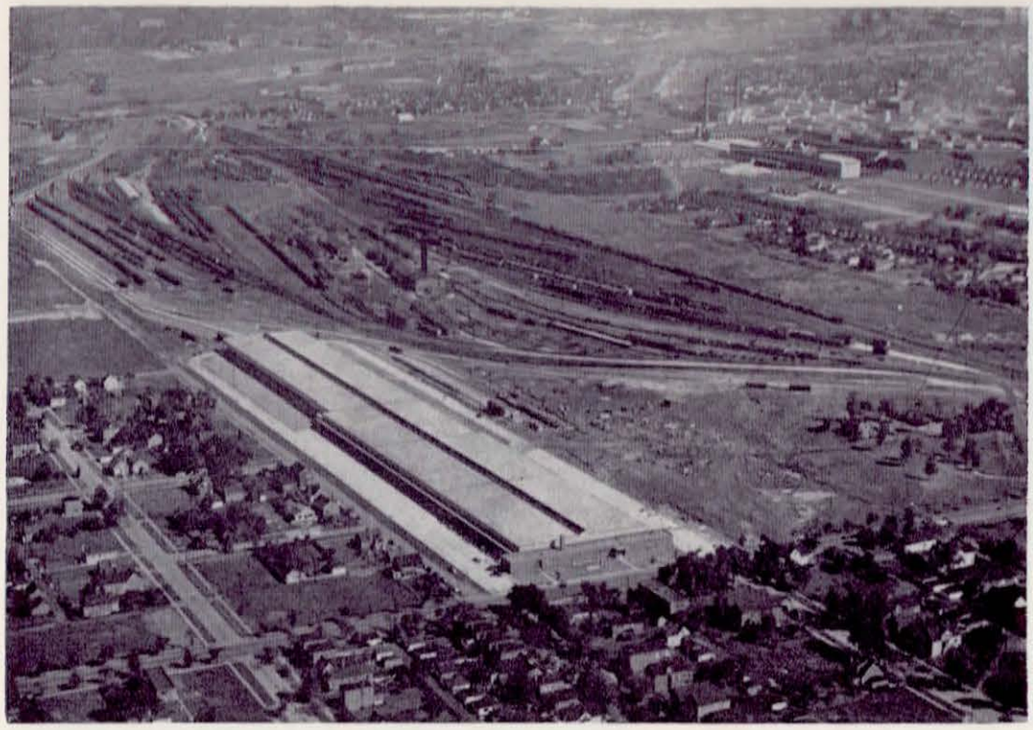
NEW LINES are being built, in Canada especially, at an increasing rate. One of those nearing completion is the extension of the Pacific Great Eastern from Quesnel, B.C., to a connection with the Canadian National at Prince George. Here a PGE freight is crossing the Cheakamus river on one of that line's new bridges.

The total of new lines constructed in the United States last year was only about 13 miles less than that completed the year before, but the 33.81 miles of second track finished in 1952 was about 29 miles more than was built in 1951.

Although the total of 116 miles of line built in the United States in 1952 is small in comparison with that constructed during the expansion era prior to 1914, it has been exceeded only three times during the past 20 years — in 1937, 1944 and 1947 — and then only by small amounts. That situation may well be changed for

MILES OF MAIN TRACK BUILT IN THE UNITED STATES IN 1952

State	No. of Companies Building	First track	Second track	Third track	Fourth track	Total
California	1	0.05	...	...	...	0.05
Colorado	1	9.54	...	...	...	9.54
Florida	2	2.57	0.13	...	...	2.70
Georgia	1	2.54	10.27	...	...	12.81
Kentucky	1	11.24	...	...	...	11.24
Michigan	1	7.50	...	...	...	7.50
Missouri	1	42.59	...	...	...	42.59
New York	1	6.89	6.89	...	...	13.78
Oregon	1	23.21	14.22	...	...	37.43
South Carolina	1	0.04	0.10	...	...	0.14
Texas	1	2.67	...	...	...	2.67
West Virginia	1	0.66	2.20	...	...	2.86
Wyoming	1	6.92	...	...	5.83	12.75
Total		116.42	33.81	0.00	5.83	156.06



FREIGHT TERMINALS were quite prominent in the 1952 construction programs. Some of the larger ones incorporate the latest developments in towing systems, and communications to speed the handling of l.c.l. are being rather generally installed.

the better this year. With 154 miles reported under construction now, it seems certain that more new lines will be completed than in 1952, and perhaps more than in any year since 1932.

In Canada a total of 000 miles of new lines was built in 1952. This compares with 55 miles built in 1951, 9 miles in 1950 and 39 miles in 1949. However, it is in Canada that much of the expansion of railway lines is presently occurring. Those lines that are now under construction, reaching out to new sources of minerals and iron ore, total about 500 miles and will be under construction for several years. One of these lines constituted the largest single construction project underway in North America during 1952, involving the expenditure of $150,000,000 to construct the Quebec, North Shore & Labrador to reach large iron-ore deposits. This project is reported as 70 per cent complete, and will be in service late in 1954.

Bridge Work Goes Up

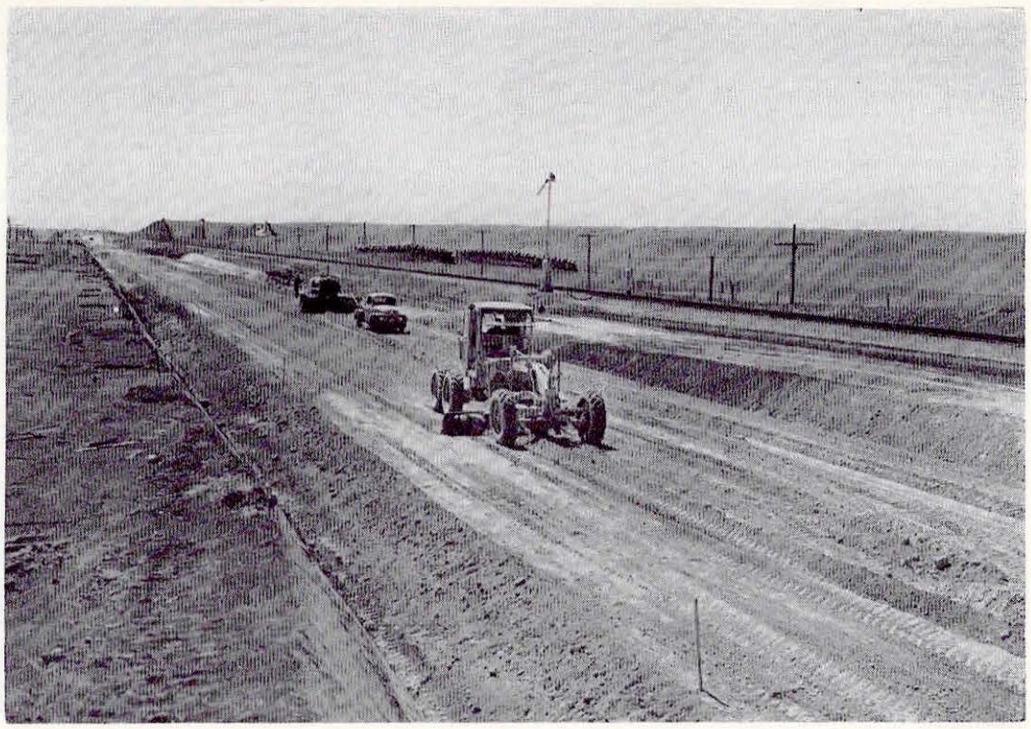
Disregarding the unclassified but well-known expenditures which we have assigned to new lines and additional tracks, bridge work constituted the second largest category of construction projects under way during 1952. This was a big jump from 1951. Grade separations, although climbing $10,000,000 in total value of projects under way, held third-place ranking.

In recent years it has been characteristic of construction expenditures that a large percentage of all additions and betterments have been designed to permit utilization of the full capacity of diesel-electric locomotives which have been bought in such large quantities. Projects of this nature under way in 1952 were valued at about $2,000,000 more than those in progress in 1951.

Such facts as these are shown in the table giving a comprehensive analysis of the major categories of construction work reported in progress during the year, exclusive of signaling and miscellaneous construction. It shows, for instance, that construction of industrial tracks during 1952 will cost almost $33,000,000 when completed. This total is about $4,000,000 more than was reported for the same category last year. It also shows that revisions of grade and alinement total only about $26,000,000 and ended the year with one of the smallest "carry-overs" of any category listed. All figures given in this table represent the construction activities of 150 railroads that furnished details of their expenditures. Because several Class I railroads were unable to break down their expenditures by categories, the figures shown in the table, as large as they are, must be considered as minimum.

Most of the construction in progress in the United States during 1952 was on Class I line-haul carriers, but the shorter lines were also adding to and bettering their properties. However, unlike the major roads, whose capital expenditures during the year probably reached a higher total than any time during the past 20 years, the smaller roads estimated that their capital expenditures for 1952 would be only $9,744,157 as compared with $12,540,129 charged in the previous year. Included among the roads reporting these figures are many Class I switching and terminal roads.

The largest construction project under way in the United States, on which detailed costs are available, involved the expenditure of about $18,000,000 or more for the construction of the publicly owned New Orleans Union Passenger Terminal, which will not be completed until 1954. On the other hand two other rather large projects were completed in 1952. One was the revision of grade and alinement of the Southern Pacific required by the construction of the Lookout Point dam on the Willamette river between Armet, Oro., and Jasper. This project involved a total expenditure of about $17,000,000. The other was the Centennial Cutoff of the Burlington, which cost about $16,330,000. For a number of other very large projects in progress detailed costs are not available. Among these are the Pennsylvania's terminal improvements at Philadelphia and Pittsburgh. Either of these two betterments might well involve ex-



SECOND MAIN TRACK 42 miles long, being constructed on the Union Pacific between Cheyenne, Wyo., and Speer, was one of the largest new-track projects in the United States.

penditures in excess of those reported for the other major projects listed above.

Following is a detailed report by roads of all construction projects, either completed during the year, or still in progress at its close, the individual cost of which approached or exceeded $1,000,000, as well as all new lines and multiple tracks constructed, under construction or under survey, regardless of cost.

RAILWAY CONSTRUCTION IN NORTH AMERICA

(Figures in parentheses indicate percentage of completion at the end of 1952)

UNITED STATES

Alaska

Important Work Undertaken: Construction of car and coach shop, Anchorage, $1,317,699 (100); replacement of 291 miles of 70-lb. rail with 115-lb rail, including respacing ties, replacing ties, installing additional ties and placing ballast on the entire system, $8,163,532 (100).

Atchison, Topeka & Santa Fe

Important Work Undertaken: Raising grade, Argentine, Kan., to Holliday (50); revision of grade and alinement of the third main and the raising of all main tracks, Merrick, Kan., to Ellinor (95); construction of freighthouse, Corwith, Ill. (100); construction of diesel shop, Argentine, Kan. (15); revision of yard, Belen, N.M. (50); installation of C.T.C., including track changes, Bakersfield, Cal., to Calwa (75).

Atlantic Coast Line

First Track: Rearrangement of tracks at Pee Dee, S.C., 0.04 miles.
Second Track: At Pee Dee, S.C., 0.10 miles; at Tampa, Fla., 0.13 miles.

Baltimore & Ohio

First Track: Jane Lew, W.Va., to Weston, 0.66 miles.
Second Track: Bridgeport, W.Va., to Clarksburg, 2.20 miles.
Important Work Undertaken: Construction of new tunnel, Clarksburg, W.Va., $5,000,000 (100); construction of access road and truck-parking facilities, Baltimore, Md., $1,000,000 (100); reconstruction of bridge, Baltimore, Md., $1,000,000 (40).

Canton

Important Work Undertaken: Installation of a conveyor system at ore pier, including a 48-in. conveyor belt, 1,336 ft. long, and a slope conveyor, 275 ft. long, a surge bin with a capacity of 1,500 tons, and four weigh hoppers over four tracks, Canton, Baltimore, Md., $1,500,000 (100).

Chesapeake & Ohio

New Line Projected: Lookout, W.Va., to Landisburg, 10,000 miles.
Important Work Undertaken: Replacement of steel spans in viaduct, Tredegar st. to 14th st., and reconstruction of three other bridges, Richmond, Va., $3,461,000 (80); replacement of steel spans in viaduct, 14th st. to 18th st., Richmond, $2,216,000 (8); installation of C.T.C., including track changes, Westham, Va., to Bremo, and from Balcony Falls, Va., to Lynchburg, $1,067,625 (85); bridge on new line, Snowden, Va., $1,429,000 (1); construction of diesel shop at Clifton Forge, Va., and of diesel-locomotive servicing facilities between Clifton Forge, Va., and Newport News, $2,726,900 (1); replacement of approaches to Big Sandy bridge, Kenova, W.Va., to Catlettsburg, Ky., $1,917,700 (100); construction of diesel-locomotive servicing facilities at Huntington, W.Va., Russell, Ky., and on the Hocking division, $2,534,735 (100); construction of tracks to serve industrial plant, Robbins (Teays), Ohio, $1,150,000 (100); installation of C.T.C., including the extension of passing tracks, Cheviot, Ohio, to Drew, Ind., $2,101,690 (100); installation of C.T.C., including the extension of passing tracks, Drew, Ind., to Peru, $1,546,000 (75); installation of C.T.C., including the extension of passing tracks, Peru, Ind., to Griffith, $1,463,200 (1).

Chicago & North Western

Important Work Undertaken: Construction of four-lane highway bridge to replace Mannheim Road (U.S. 45) viaduct over Proviso yards, Proviso, Ill., $1,050,490 (started).

Chicago, Burlington & Quincy

Important Work Undertaken: Construction of Centennial Cutoff, Needles, Mo., to Maxwell, involving 6.53 miles of new line and reconstruction and rehabilitation of 21.84 miles of main track, $16,330,154 (100); improvements to bridges at Kansas City, Mo., Callao, Mo., Wheeling, Mo., Woodland, Mo., and Island Park, Iowa, $1,093,683 (85); construction of freighthouse and rearrangement of yards, Morton Park, Ill., $4,100,000 (4).
(Kansas City & Brookfield) *First Track*: Cotter, Mo., to Maxwell, 42.59 miles.

Chicago, Milwaukee, St. Paul & Pacific

Important Work Undertaken: Rearrangement of Air Line yard to provide modern classification and improved communication facilities, including hump with car retarders, Milwaukee, Wis., $3,000,000 (100); revision of grade and alinement, including the construction of a new railroad bridge over the Missouri river (government project), Chamberlain, S.D., $6,500,000 (50); construction of Franklin Avenue underpass (state highway project), Minneapolis, Minn., $1,545,000 (100).

Chicago, Rock Island & Pacific

New Road Under Construction: Atlantic, Iowa, to McClelland, 33.86 miles; at Council Bluffs, Iowa, 0.80 miles.
Important Work Undertaken: Construction of hump yard, Silvis, Ill. (100); construction of 34.52 miles of new line, and the removal of 41.09 miles of present line, Atlantic, Iowa, to Council Bluffs (30); construction of diesel shop and other facilities, including the retirement of old steam facilities, Chicago (40); relocation of main line, including two bridges, in connection with government flood control work, Hutchinson, Kan. (20).

Clinchfield

Important Work Undertaken: Installation of C.T.C., including construction of additional passing tracks and lengthening present passing tracks, Erwin, Tenn., to Spartanburg, S.C., $1,117,000 (100).

Colorado & Wyoming

First Track: East Weston, Colo., to Allen Mine, 9.54 miles (relocation).

Denver & Rio Grande Western

Important Work Undertaken: Construction of hump-retarder yard, Grand Junction, Colo., $4,220,000 (58).

Duluth, Missabe & Iron Range

Important Work Undertaken: Remodeling of ore dock, including installation of new spouts, hoists, motors, a machinery platform and other facilities, Two Harbors, Minn., $1,650,000 (100).

Duluth, South Shore & Atlantic

New Road Under Construction: Bergland, Mich., to White Pine, 14.50 miles.

Erie

First Track: Corning, N.Y., to Erwin, 6.89 miles (relocation).
Second Track: Corning, N.Y., to Erwin, 6.89 miles (relocation).
Important Work Undertaken: Construction of shop facilities for servicing diesel locomotives, including construction of a service and repair shop, a storeroom, locker room, and a lube-oil building, plus the rearrangement of tracks and installation of sanding and fueling facilities, Youngstown (Brier Hill), Ohio (30); enlargement of diesel shop facilities, including an extension to the service shop, and repair shop, construction of a lye vat and a two-story employees' service building plus the rearrangement of tracks and other servicing facilities, Marion, Ohio (95); elimination of highway crossings on the Erie and the Delaware, Lackawanna & Western, based primarily on the relocation of 6.89 miles of Erie main line, including the construction of 13 single-span, and seven multiple-span railway bridges, two multiple-span overhead highway bridges, alteration of an existing overhead highway bridge, the building of three pedestrian subways and 29 drainage structures, construction of a passenger station and plaza on the Erie, including a platform and canopy between the main tracks and served by a pedestrian subway, moving Lackawanna passenger station to a new foundation, construction of a freighthouse and driveway, miscellaneous street pavements and sidewalks, plus installation of diesel-terminal facilities, Corning, N.Y. (90).

Illinois Central

Important Work Undertaken: Modernization of northward hump classification yard, Markham yard, Ill., $1,820,000 (100); strengthening and renewing parts of bridge over Ohio river, Cairo, Ill., $6,000,000 (100).

Illinois Terminal

Important Work Undertaken: Replacement of timber vehicular roadways on overhead bridges with steel I-Beam-Lok construction, St. Louis, Mo., and Venice, Ill., $1,000,000 (20).

Jersey Central Lines

Important Work Undertaken: Construction of westbound classification yard, including installation of car retarders, improvement of car-repair facilities, and installation of signal equipment, Allentown, Pa., $3,600,000 (90).
(New York & Long Branch) *Important Work Undertaken*: Construction of double-track main line on an embankment across Matawan Creek valley, including abandonment of existing timber trestle, Matawan, N.J., $1,013,000 (75).

Lakefront Dock & Railroad Terminal

Important Work Undertaken: Installation of two Hulett ore unloaders and the reconditioning of two other Huletts, Toledo, Ohio, $3,000,000 (50).

Lake Superior & Ishpeming

First Track: Humboldt, Mich., to Republic, 7.50 miles.

Long Island

Important Work Undertaken: Installation of wayside facilities for automatic speed control, $2,396,243 (70); elimination of two grade crossings at Terrace Place and Central avenue, Valley Stream, N.Y., $3,239,216 (2); elimination of two grade crossings at South Oyster Bay road and Broadway, Massapequa, N.Y., $1,144,380 (1).

Louisville & Nashville

Spur Track Constructed: General Electric spur, Louisville, Ky., 5.77 miles; Thermal spur near Drakesboro, Ky., 1.35 miles; Coiltown spur near Coiltown, Ky., 4.12 miles; Chemstrand spur, Gonzales, Fla., 2.57 miles.
Important Work Undertaken: Installation of C.T.C., including necessary track changes, Corbin, Ky., to Etowah, Tenn., $2,315,183 (2); construction of receiving yard, classification yard, departure yard, and other terminal facilities, Radnor yard, Nashville, Tenn., $10,546,600 (40).

Mississippi & Skuna Valley

Important Work Undertaken: Relocation of 10 miles of line because of federal government construction of Grenada dam, Bruce Junction, Miss., to Bruce (started).

Missouri-Kansas-Texas

Important Work Undertaken: Revision of grade and alinement, involving the relocation of several sections of main track, totaling 8.20 miles, work being done by federal government because of the construction of Ft. Gibson dam on the Grand river, near Wagoner, Okla., $2,000,000 (50).

Missouri Pacific

Important Work Undertaken: Construction of a main track and elevated structure connecting Lesperance Street yard with 12th Street yard, St. Louis, Mo., $1,252,000 (50); raising main tracks at levee crossings and in unprotected areas, including the construction or reconstruction of all fills, bridges and other items, Alton, Ill., to Gale, $5,000,000 (61).

Monongahela

Important Work Undertaken: Extension of Paw Paw branch, involving construction of 8.32 miles of single track, including two bridges, a short highway and a 2,700-ft. tail track, plus 900 ft. of subgrade for a wye connection, Grant Town, W. Va. to Sugar Run and Rivesville, $1,980,000 (100).

Nashville, Chattanooga & St. Louis

Important Work Undertaken: Construction of six miles of freight main tracks to connect existing tracks to a new joint freight yard now under construction by the Louisville & Nashville, Nashville, Tenn., $3,000,000 (40).

New Orleans Union Passenger Terminal

Important Work Undertaken: Construction of foundations and erection of structural steel for passenger station, $2,250,000 (98); construction of coach yard facilities (50), and installation of signaling and interlocking facilities, more than $1,000,000 (75). Total cost of this publicly owned terminal when completed in 1954 will be approximately $18,000,000.

New York Central

Important Work Undertaken: Construction of United Fruit terminal, Weehawken, N.J. (100); reconstruction of bridge, New York (25); construction of diesel-locomotive servicing facilities, Watertown, N.Y. (100); construction of diesel-locomotive servicing facilities, Minoa, N.Y. (75); elimination of grade crossings at Genesee street, W. Seneca street, Erie and Terrace streets, and at Church street, Buffalo (85); elimination of grade crossings at Hague street, Colvin street, York street, Childs street, and Ames street, Rochester (100); construction of Major Deegan Boulevard and Exterior street bridge, New York (100); construction of bridge at New Jersey Turnpike, Little Ferry, N.J. (100); construction of structures at Ontario Thruway, North Port Byron, N.Y. (100); removal of two present piers and the construction of a new pier, East Boston, Mass. (3); construction of facilities for inspecting, fueling, and servicing diesel locomotives, Buffalo (10); elimination of grade crossing, Broadway street, Kingston, N.Y. (100); elimination of grade crossing, Central avenue, Lancaster, N.Y. (100); reconstruction of bridges at Seneca street and Hamburg street, Buffalo (5); track and signal improvements, Lyons, N.Y., to Belle Isle (started); track and signal improvements, Schenectady, N.Y., to Ft. Plain (started); construction of diesel-servicing facilities, Gardenville, N.Y. (started); construction of facilities for fueling and servicing diesel locomotives, Stanley (Toledo), Ohio (100); construction of facilities for fueling and servicing diesel locomotives, Ashtabula, Ohio (95); elimination of grade crossing at Reynolds Road (U.S. 20), Holland, Ohio (100); elimination of grade crossing on Lytle street, (U.S. 23) Fostoria, Ohio (100); elimination of grade crossings at E. 72nd street, Lake-Front line, Cleveland, Ohio (80); construction of Cuyahoga River bridge No. 4, Cleveland, Ohio (80); construction of Cuyahoga River bridge No. 2, Cleveland, Ohio (2); construction of repair facilities for diesel locomotives, Collinwood (Cleveland), Ohio (90).
(Michigan Central) *Important Work Undertaken*: Construction of overhead bridge, carrying South Cedar street (U.S. 127) over adjacent property and tracks of the New York Central and Grand Trunk Western, Lansing, Mich. (100).
(Indiana Harbor Belt) *Important Work Undertaken*: Expansion of Blue Island yard, Riverdale, Ill. (50); construction over Congress street super highway, Bellwood, Ill. (5).
(Pittsburgh & Lake Erie) *Important Work Undertaken*: Construction of facilities for maintaining diesel locomotives, McKees Rocks, Pa. (18).
The approximate cost of these projects and others involving, individually, an expenditure of $100,000 or more, will amount to $107,549,700.

New York, Chicago & St. Louis

Important Work Undertaken: Installation of C.T.C., including track changes, Claypool, Ind., to Van Loon (97).

New York, Susquehanna & Western

Important Work Undertaken: Construction of interchange facilities with the Pennsylvania, including a track and viaduct, work being done by the Pennsylvania, Jersey City (Croxton), N. J., $1,400,000 (100).

Norfolk & Western

New Road Under Construction: Lick Branch, W. Va., to North Fork, 5.03 miles (relocation).
Important Work Undertaken: Construction of engine-service building, including water-supply facilities, engine-washing facilities, ash-handling facilities, and other improvements to enginehouse, drop pits, inspection pits, oilhouse, roadways, tracks, and power lines, Portsmouth, Ohio, $2,300,000 (95); revision of grade and alinement, including the construction of 5.03 miles of double track, laid with 132-lb. rail, installation of power-operated switches, construction of a 50,000-gal. wood tank and two standpipes, construction of a passenger-and-freight station at Elkhorn, W. Va., on the relocated line between Lick Branch and North Fork, $3,813,500 (100); construction of an 850-car classification yard, including 9.70 miles of track, 61 turnouts, miscellaneous signaling facilities, a retarder system, and electrically operated automatic switches, Lamberts Point, Va., $1,135,000 (100); installation of two electrically operated traveling sidewall loaders with mechanical trimming machines, on the south side of coal pier No. 4, Lamberts Point, $1,080,000 (70); extension of the eastbound receiving and forwarding yards at Bluefield, W.Va., including 1.9 miles of new 132-lb. rail with 10 turnouts and 13.8 miles of secondhand 131-lb. rail with 73 turnouts, installation of signals, floodlights, a track scale, and construction of yard buildings and other facilities, $2,050,900 (50); installation of communication facilities on the entire system, including circuits for the use of dispatchers, for local and long-distance telephones and for telegraph or printers service, $1,342,900 (50).

Northern Pacific

Important Work Undertaken: Reconstruction of bridge over Columbia river, Pasco, Wash., $5,500,000 (27).

Pennsylvania

New Spurs Under Construction: Ellsworth, Pa., to Bethlehem Collieries Corporation mine No. 60, 2.21 miles; Powhatan Point, Ohio, to Armstrong Mills, 8.07 miles.

Important Work Undertaken: Construction of Philadelphia improvements (Step 1) west of Schuylkill river (92), east of Schuylkill river (2); construction of yard and track to serve Studebaker Corporation, Adams, N. J. (99); construction of interchange with the New York, Susquehanna & Western, Jersey City, N. J. (100); construction of siding and yard additions to serve U.S. Steel plant, Morrisville, Pa. (50); construction of ore-unloading facilities, Philadelphia, Pa. (30); construction of freight station at Butler and Sepviva streets, Philadelphia, Pa. (15); construction of freight-car repair shop, Hollidaysburg, Pa., (2); construction of scrap dock and reclamation plant, Hollidaysburg, Pa. (1); passenger-terminal improvements, Pittsburgh, Pa. (28); construction of spur track, Ellsworth, Pa (100); construction of spur track to Armstrong Mills, Ohio, including yard tracks and yard extension, Powhatan Point, Ohio (15). The approximate cost of these projects is $85,417,540.

Reading

Important Work Undertaken: Reconstruction of bridges and installation of new signal controls on Reading Belt branch, Reading, Pa., $2,900,000 (60).

Rockdale, Sandow & Southern

First Track: Marjorie, Tex., to Sandow, 2.67 miles.

Seaboard Air Line

First Track: Alabama Junction, Ga., to Blossom, 2.54 miles (relocation).

Second Track: Fleet, N.C. to Aberdeen, 10.27 miles.

Important Work Undertaken: Construction of yard and shop facilities, Savannah, Ga., (98).

Southern

Important Work Undertaken: Construction of train yard and engine terminal facilities, Ernest Norris yard, Birmingham, Ala., $9,200,000 (90); extension of present yard and construction of engine-terminal facilities, Oliver yard, New Orleans, La., $1,995,000 (98).

Southern Pacific

First Track: Armet, Ore., to Fall Creek Junction, 23.21 miles.

Second Track: Polvo, Ariz., to Vail, 14.22 miles.

New Road Under Construction: Studebaker, Cal., to Puente, 8.56 miles.

Important Work Undertaken: Revision of grade alinement near Lookout Point dam on middle fork of the Willamette river, including construction of 23 miles of new line, two major bridges to effect river crossings, extremely large cuts and fills, and heavy rock shells to protect reservoir areas, work being done by federal government, Armet, Ore., to Jasper, $17,000,000 (100); conversion of flat-switching yard to an automatic car-retarder yard, Roseville, Cal., $4,715,070 (93); construction of a by-pass line to serve Los Angeles harbor area eliminating need for hauling cars to Los Angeles and back to the harbor, Downey, Cal., to Puente, $4,718,220 (10); construction of diesel-servicing facilities, consisting of three additional inspection pits, a superstructure over six inspection pits, four additional elevated platforms, installation of machinery in drop pits, installation of two overhead cranes, construction of upper floor to a stores building, installation of wheel-truing machine, installation of a 10-ton overhead crane, a load tester, diesel-washing facilities, construction of a 20-ft. by 30-ft. addition to the machine shop, and various communication facilities, tracks, steam, air, sewer and electric lines, Roseville, $1,740,310 (98); installation of C.T.C., including track changes on 99.1 miles of main track, involving the extension of 13 sidings to accommodate 110-car trains and the retirement of six sidings, Klamath Falls, Ore., to Crescent Lake, $2,460,836 (25); revision of grade and alinement, including construction of two 125-car sidings, 5½ miles of access spurs and interchange tracks, installation of one 4-track signal bridge, installation of one 3-track signal bridge and 7 cantilever-type light signals, construction of a new station and section-headquarters building, extension of seven drainage structures and the construction of two others, work performed jointly by railroad and contractors at the expense of the federal government, Polvo, Ariz., to Vail, $1,150,000 (100).

(Petaluma & Santa Rosa) *New Road Under Construction*: Liberty, Cal., to Two Rock, 5.43 miles.

Terminal Railroad Association of St. Louis

Important Work Undertaken: Construction of mail-handling facilities, including a building, 121 ft. by 206 ft., containing sorting platforms and auxiliary facilities, construction of a mail-car shed, 164 ft. by 420 ft., with auxiliary shed, 82 ft. by 270 ft., having loading and unloading platforms and unloading conveyor belts, construction of two bridges across city streets to carry conveyors to the post office and to existing trainshed, Union Station, St. Louis, Mo., $3,000,000 (95).

Union Pacific

First Track: Cheyenne, Wyo., to Speer, 6.92 miles.

Fourth Track: Cheyenne, Wyo., to Speer, 5.83 miles.

New Road Under Construction: Speer, Wyo., to Dale Junction, 35.08 miles.

Important Work Undertaken: Construction of diesel repair and servicing facilities, including rearrangement and construction of additional yard tracks, Salt Lake City, Utah, $4,781,000 (10); construction of 14.12 miles of new line, replacing 14.09 miles of present line which will be under water on completion of McNary Dam, Juniper, Wash., to Attalia, $2,631,417 (70); construction of 42 miles of track for operation as westbound main line, including relocation of line between Cheyenne, Wyo., and Speer and construction of six passing tracks, a locomotive watering station and stockyards, Cheyenne, Wyo., to Laramie, $14,300,000 (80); replacement of present two-indication, non-coded cab signals with three-indication coded cab signals and the respacing of present color-light signals, North Platte, Neb., to Cheyenne, Wyo., $1,663,000 (100); installation of 78.6 miles of C.T.C., including track changes, Menoken, Kan., to Marysville, $1,596,076 (100); installation of 141 miles of C.T.C., including changes in passing tracks, Marysville, Kan., to Gibbon, Neb., $1,843,039 (30); exchange of land with the state and revision of grade and alinement between M.P. 50.34 and M.P. 52.31 and between M.P. 53.27 and M.P. 54.50 on account of reconstruction of the Columbia River highway, Wyeth, Ore., to Viento, $1,000,063 (50); construction of additional diesel-locomotive facilities including more trackage, a crew dispatchers' office and a locker building, Los Angeles, Cal., $1,360,000 (50).

Wabash

Important Work Undertaken: Construction of train yard, Decatur, Ill., $3,757,916 (75).

Western Pacific

Important Work Undertaken: Installation of traffic control system, including extension of sidings to 125-car capacity, Wendover, Utah, to Salt Lake City, completing the program on entire main line from Oakland, Cal., to Salt Lake City, $2,100,000 (100); replacement of 29.35 track miles of 85-lb. rail with 115-lb. material, including replacement of turnouts and the provision of 3-in. ballast cushion, Midway, Cal. to Stockon, $1,233,500 (10); replacement of 31.81 track miles of 85-lb. rail with 115-lb. material, including replacement of turnouts and provision of a 3-in. ballast cushion, Burmester, Utah, to Salt Lake City, $1,159,000 (100).

CANADA

Canadian National

First Track: Sherridon, Man., to Churchill River crossing, 54.00 miles.

New Road Under Construction: Terrace, B.C., to Kitimat Arm, 41.00 miles.

New Line Under Survey: Near Linwood, N.S., to the Strait of Canso, 44.50 miles.

Important Work Undertaken: Construction of car-shop facilities, including a repair shop, paint shop, trackwork, extension to a stores building and a work equipment shop, Pointe St. Charles, Montreal, Que., $4,575,000 (80); construction of facilities for repairing diesel locomotives, including remodeling interior of existing electric locomotive shop, construction of a 159-ft. by 167-ft. extension to existing electric locomotive shop, together with installation of a 100-ton drop table, five crossover bridges, a 35-ton overhead electric traveling crane with 10-ton auxiliary, together with sanding facilities, dryers, cleaning equipment and incidental trackwork, Pointe St. Charles, $1,300,000 (22); expansion and improvement of track facilities in yard, Turcot, Montreal, $2,350,000 (57); construction of freight-shed buildings, a general freight-office building, platforms, teamways and team tracks, to replace facilities destroyed by fire in 1948, Montreal, $5,245,000 (88); construction of improvements to Central Station approach facilities, including the extension of four stub tracks to form through tracks, necessitating removal of five buildings, the extension of subtrack area, South Plaza, completion of the west end of Lagauchetiere Street bridge and construction of a double-track span across St. Antoine street and of an additional ladder lead track across streets, Montreal, $4,000,000 (80); diversion of two main-line passenger tracks and enlargement of yard, including installation of an intercommunication system, construction of car-repair buildings and incidental car-repair tracks, platforms, sewers and paving between trackage, Mimico, near Toronto, Ont., $4,000,000 (90); construction of improvements to grain elevator, Port Arthur, Ont., $1,500,000 (20); extension to ore dock, Port Arthur, $3,200,000 (5); installation of C.T.C. on about 106 miles of single track between Atikokan, Ont., and Conmee Junction on the Kashabowie subdivision, $2,325,000 (33).

Canadian Pacific

First Track: Two Hills, Alta., 6.00 miles; on the Tobique diversion, 6.59 miles.

Important Work Undertaken: Construction of facilities for operating and maintaining diesel locomotives, Nelson, B.C., $1,689,000 (44).

Pacific Great Eastern

First Track: 8.00 miles.

New Road Under Construction: Quesnel, B.C., to Prince George, 82 miles.

Important Work Undertaken: Extension of line from Quesnel, B.C., to Prince George, $15,000,000 (95).

Quebec, North Shore & Labrador

New Road Under Construction: Seven Islands, Que., to iron-ore mines, Knob Lake, Labrador, 360 miles.

Important Work Undertaken: Construction of single-track railway, 360 miles long, laid with 132-lb. rail on heavy-duty tie plates, including 22 passing sidings, each 5,500 ft. between clearance points, plus 22 bridges, either steel and concrete or wood-pile trestles, two tunnels, one 2,250 ft. long and one 700 ft. long, a hump-retarder classification yard at Seven Islands, a small assembly yard at Knob Lake, wharves with incidental facilities for transporting iron ore to ships, various facilities for the maintenance of mechanical equipment, and centralized traffic control facilities for the entire line, Seven Islands to Knob Lake, $150,000,000 (70).

MEXICO

National Railways of Mexico

New Road Under Construction: Teotihuacan to Metepec, 1.30 miles; Rio Bravo to S. Fernando, 26.20 miles; El Risco to San Rafael, 8.20 miles; San Juan del Rio to San Nicolas, 9.90 miles.

Important Work Undertaken: Construction of railway terminal, including a 14-story administration building, a passenger station with modern facilities in the city, and a freight terminal in a new industrial district about 30 miles outside the city, Mexico City, $11,574,000 (50); replacing light rail with 112-lb. rail for 445 kilometers between San Luis Potosi and Tampico (100); replacing light rail with 112-lb. rail for 512 kilometers, Tampico to Monterrey (98); replacing very light rail with 85-lb., secondhand rail, Ixtepec to Suchiate (100); converting narrow-gage line to standard gage, Mexico City to Puebla and Oaxaca (100); construction of passenger and freight terminals at Jalapa, (100); construction of passenger stations at Nuevo Laredo (100), Guadalajara (50), Puebla (50) and Monterrey (50).

Warren Brown Is New Monon Chief

Warren W. Brown

Warren W. Brown, vice-president in charge of traffic of the Chicago, Indianapolis & Louisville, has been elected president and a director of the company, succeeding John W. Barriger, whose election as vice-president of the New York, New Haven & Hartford was reported in *Railway Age* December 22, 1952, page 49. H. A. Smith has been elected to the newly created position of executive vice-president.

The selection of its top traffic man to head the Monon organization gives emphasis to the road's having successfully passed beyond the initial stages of its renovation—the stages which required that primary attention be directed toward modernization of its physical plant. Fully dieselized for several years and with almost every mile of line rehabilitated to high standards, the road remains on a comparatively thin diet of traffic because virtually all of its mileage is in highly competitive territory.

"Selling" the Railroad

Former President Barriger has put the Monon's situation in these words: "For us the problem of getting higher average trainloads and increasing our revenue per train is a job for the traffic department rather than the operating department." Toward that end, but with an eye toward community and public relations as well, Mr. Barriger and Mr. Brown have worked very closely as a traffic team "selling" Monon to shippers, patrons and the general public. At the same time they have kept close watch over the day-to-day quality of the road's freight and passenger services.

Often this "selling" of the railroad has taken the form of "barnstorming" tours to each and every on-line community (*Railway Age*, September 29, 1952), an unscheduled, but regular feature of which was a visit to virtually every interlocking tower, yard office and crossing watchman's shanty along the way. From these tours, Mr. Brown has gained an unusually detailed knowledge of the Monon's physical plant plus numerous on-the-ground contacts within the company which have had a marked effect on employee-management relations. The off-line phases of "selling" the Monon have likewise brought Mr. Brown into a country-wide acquaintanceship with shippers and railroad traffic and operating men in whose circles the Monon has become noted for its novel, but effective, traffic breakfasts.

When asked by *Railway Age* what his plans for the Monon's future might include, Mr. Brown replied: "We will carry right on with the successful program that Mr. Barriger has founded."

The Monon, because it is located in such highly competitive territory, operates rather limited daily freight train mileage. Two scheduled trains each way serve the main line between Hammond, Ind. (freight terminal for the Chicago area) and Louisville, Ky., while a single train daily in each direction is the rule for most of the remaining mileage. The net tonnage per train has been somewhat below the national average. Thus, with a traffic pattern of this kind, additional traffic, even in small quantities, could produce a distinct improvement in the road's earnings picture. This means that the traffic department, even more so than on typical roads of comparable size, holds the key to the Monon's future well-being.

Conversely, but as a direct result of this condition, Mr. Brown, as head of the traffic department, has taken an unusually active part in other phases of the road's management.

Formerly With Nickel Plate

Mr. Brown came to the Monon as traffic vice-president a little more than a year after reorganization of the road was completed and the present management took over the property in 1946. Prior to that time his entire railroad career had been spent in traffic work with the New York, Chicago & St. Louis and its predecessor, the Toledo, St. Louis & Western. A native Chicagoan, Mr. Brown did not enter railroad service at the outset of his business career. Following graduation from a private school in Chicago, he went to work for DeWitt, Trimble & Co., and for Marshall Field & Co., in 1917. A year later he entered military service with the Marine Corps where he remained on duty until 1919 when he returned to private life and to his duties with Marshall Field & Co.

It was in 1924 that Mr. Brown turned to railroading and entered service as a freight representative of the TStL&W. He served that road in that capacity until 1928 when he was appointed general agent at Omaha, Neb. Next, in 1931, he was appointed general agent of the Nickel Plate at Pittsburgh, Pa.—a post which he held for ten years. In 1941 he was promoted to assistant general freight agent at Chicago and in 1944 he was further promoted to general freight agent at St. Louis, Mo. He was serving the Nickel Plate in this capacity when he was elected traffic vice-president of the Monon on October 1, 1947.

Cat 'Dozers slug it out with the world's toughest jobs

A D6-No. 6A Bulldozer, owned by the Q.N.S.&L. Railway, clears land for a railroad grade near Seven Islands, Quebec, Canada.

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FINANCIAL

(Continued from page 18)

The plan would also reduce substantially the road's capital stock liability.

Savannah State Docks Railroads.—*Operation.*—This agency, an operating subsidiary of the Georgia Ports Authority, has obtained approval of the I.C.C. to operate a switching line serving docks and warehouses of the Ports Authority near Savannah, Ga. The switching facilities consist of 1.3 miles of main line, and 12.9 miles of other trackage. SSDR will be the connecting link between docks and warehouses of the Ports Authority and outside carriers—Atlantic Coast Line, Savannah & Atlanta and the Chatham Terminal Company. The latter carriers have heretofore performed their own switching service over the state owned trackage.

New Securities

Division 4 of the I.C.C. has **authorized:**

CHICAGO, ROCK ISLAND & PACIFIC.—To assume liability for $4,440,000 of series O equipment trust certificates, to finance in part 30 diesel locomotives and 200 freight cars costing an estimated $5,943,307 *(Railway Age,* October 27, 1952, page 66). Division 4 approved sale of the certificates for 99.4125 with interest at 2¾ per cent—the bid of Halsey, Stuart & Co.—which will make the average annual cost of the proceeds approximately 2.86 per cent. The certificates, dated January 1, 1953, will mature in 24 semiannual installments of $185,000 each, beginning July 1, 1953. They were reoffered to the public at prices yielding from 2.15 to 2.9 per cent, according to maturity.

GARDEN CITY WESTERN.—To issue and sell 500 shares of $100 par capital stock, proceeds from which will be used to acquire a 600-hp. diesel-electric switching locomotive *(Railway Age,* November 24, 1952, page 65). The road's parent, the Garden City Company, will buy the new shares at $154 each. The GCW extends from Garden City, Kan., to Wolf, approximately 14 miles.

NEW ORLEANS TERMINAL COMPANY.—To issue and sell $8,000,000 of first mortgage bonds, proceeds from which will be used to help refund $11,423,000 of outstanding first mortgage bonds due July 1, 1953 *(Railway Age,* November 24, 1952, page 65). The bonds, guaranteed by the Southern, will be sold at 98.4399 with interest at 3¾ per cent. Winning bid for the issue was submitted by Kidder, Peabody & Co. and White, Weld & Co. for themselves and six others. The new bonds, dated November 1, 1952, will mature November 1, 1977.

Retirement of this $11,423,000 in outstanding first mortgage bonds is part of the Southern's overall program for meeting bond maturities totaling $89,705,000 between the present time and November 1, 1956. They were reoffered to the public at 99.197.

NORTH PENNSYLVANIA.—To issue and sell $6,000,000 of mortgage bonds, proceeds from which will be used to retire a like amount of outstanding bonds due January 1, 1953. The new bonds will mature December 1, 1972, and will be guaranteed, as to principal and interest payments, by the Reading. The latter road operates all lines of the NP under a lease dating from 1879 *(Railway Age,* November 24, 1952, page 65). Winning bid for the new bonds was submitted by Halsey, Stuart & Co. and five associates. This bid was 100.217 with interest at 3⅝ per cent.

WABASH.—To assume liability for $6,360,000 of series D equipment trust certificates, to finance in part 26 diesel-electric locomotives (28 units) and 550 freight cars costing an estimated $7,987,325 *(Railway Age,* December 1, 1952, page 105). Division 4 approved sale of the certificates for 98.83 with interest at 2¾ per cent—the bid of Halsey, Stuart & Co. and nine associates—which will make the average annual cost of the proceeds to the road approximately 2.94 per cent. The certificates, dated January 1, 1953, will mature in 30 semiannual installments of $212,000 each, beginning July 1, 1953. They were reoffered to the public at prices yielding from 2.2 to 2.975 per cent, accordng to maturity.

Dividends Declared

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—Common, $5, semiannual; 5% preferred, $1.25, quarterly, both payable January 31 to holders of record January 14.

Security Price Averages

	Jan. 5	Prev. Week	Last Year
Average price of 20 representative railway stocks	69.61	69.32	55.22
Average price of 20 representative railway bonds	95.23	95.16	91.52

RAILWAY OFFICERS

EXECUTIVE

William E. Bolton, assistant to the president of the CHICAGO, ROCK ISLAND & PACIFIC, has been elected a vice-president of the company. In his new capacity, Mr. Bolton will be in charge of medical and employment matters. Mr. Bolton joined the Rock Island in 1919 as a statistician following his discharge from the U.S. Navy which he had joined in 1918. Prior to that time he had served first as secretary to the vice-president of the Canadian National at Toronto, and then as secretary to the general manager of the Seaboard Air Line at Norfolk, Va. After several years of service as chief clerk to the operating vice-president of the Rock Island, Mr. Bolton was named assistant to that officer in 1929. In 1938 he was appointed industrial commissioner, a position he held until his appointment as assistant to the president.

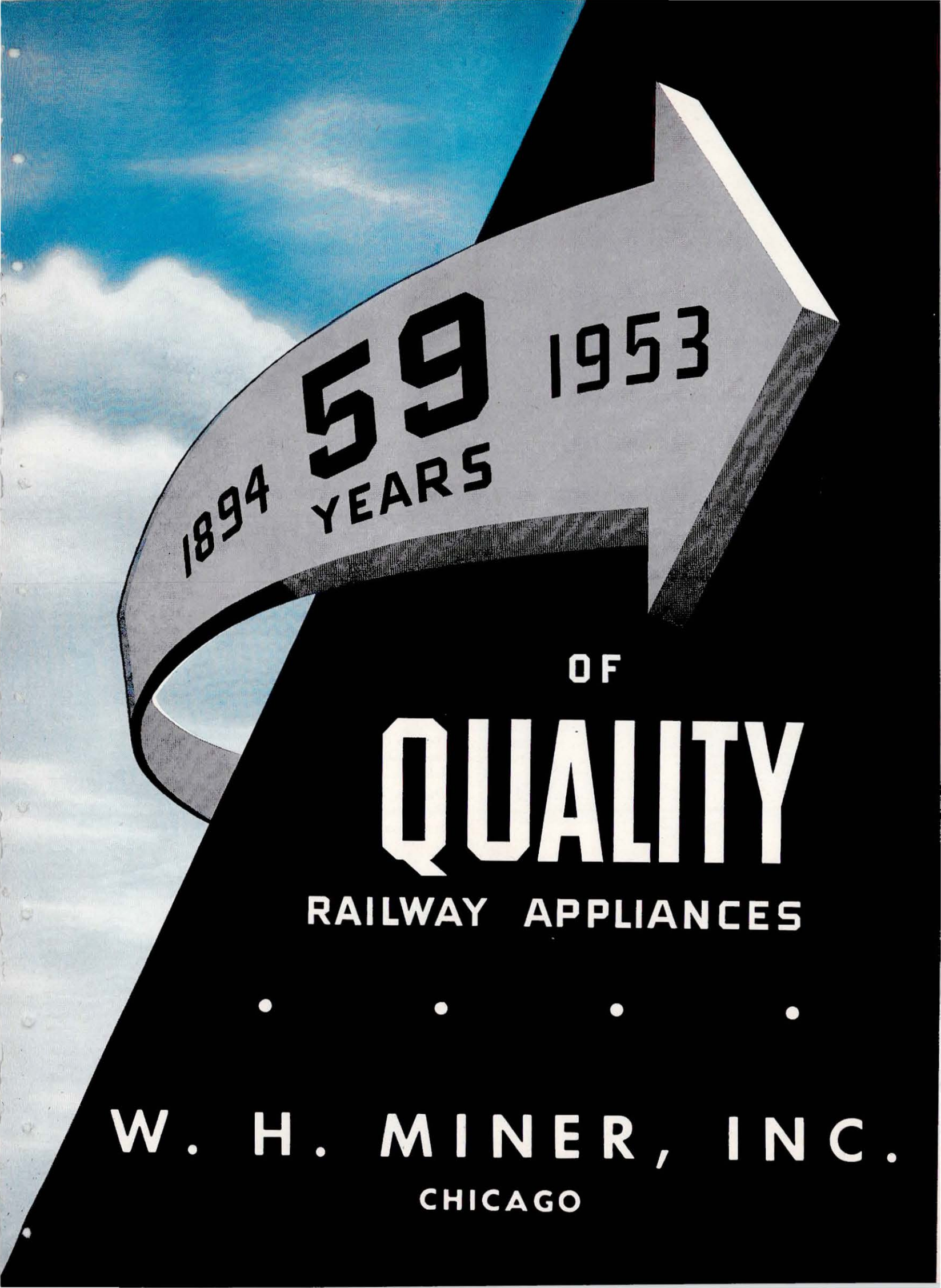
William E. Bolton

George A. Anderson, vice-president and comptroller of the Minneapolis & St. Louis, has been named vice-president in charge of finance, with supervision over treasury, accounting and other finance departments. He will continue to have headquarters at Minneapolis.

Douglas Leard, office assistant to vice-president in charge of operations of the SEABOARD AIR LINE at Norfolk, Va., has retired because of his health, after 44 years of service. Mr. Leard was born at Chester, S.C., and was graduated in engineering from North Carolina State College in Raleigh. He joined the Seaboard in June 1908 as a rodman and was appointed assistant right-of-way engineer in 1914, right-of-way engineer in 1917, construction engineer in 1924, supervisor of construction in 1930, assistant to general manager in 1936, assistant to receivers in 1942, and office assistant to vice-president in charge of operations in 1946.

J. R. Marra, vice-president, Western departments, of the RAILWAY EXPRESS AGENCY, at San Francisco, has been appointed vice-president — operations at New York. **J. F. Ross,** assistant to president, has been named assistant vice-president—operations. **C. J. Jump,** vice-president and secretary, has been appointed vice-president—administration and finance. **R. C. Hendon,** general manager of the Allegheny department at Philadelphia, has been appointed vice-president—personnel, succeeding **Albert M. Hartung,** who has been appointed vice-president — consultant. **Paul Gross, Jr.,** assistant to vice-president—accounting, has been named secretary and administrative assistant. **E. B. Hartley,** special representative to president, has been appointed assistant to president. **H. P. Dunlap,** vice-president of the executive department at New York, has been appointed vice-president of the Central departments

(Continued on page 252)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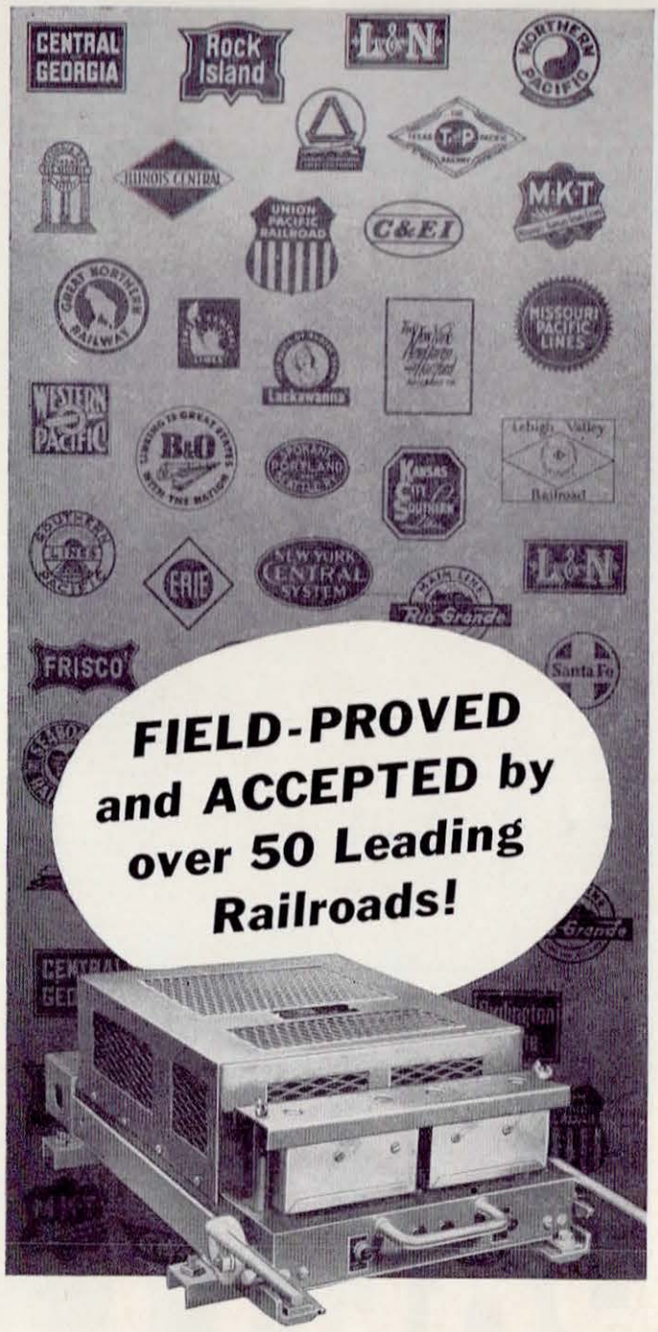

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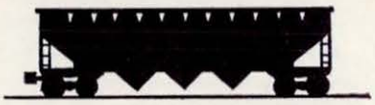

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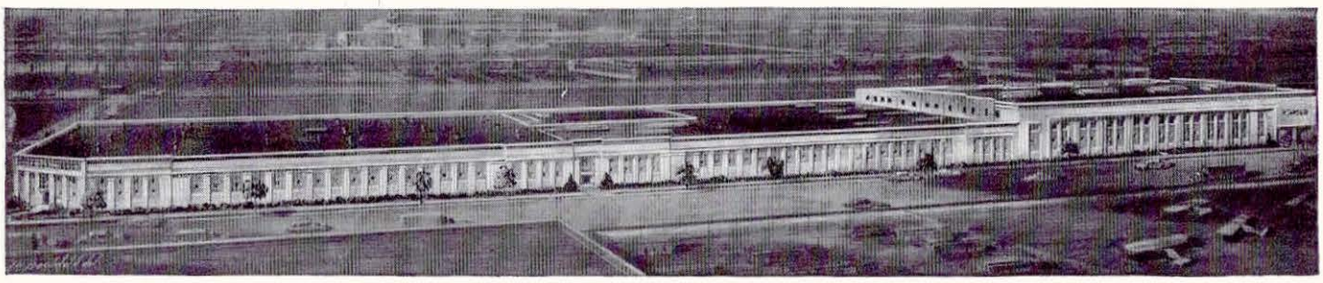

(Continued from page 248)

at Chicago. **N. R. Johnson,** general manager of the Mississippi Valley department at St. Louis, has been appointed vice-president of Western departments at San Francisco. **Stanley F. Pitcher,** general manager of the Gulf department, has been appointed vice-president of Southern departments, with headquarters as before at Atlanta, Ga. **Walter Reese,** vice-president, Central departments at Chicago, has retired after 49 years of express service. **W. J. MacGreevy,** vice-president of Southern departments at Atlanta, has retired after 44 years of service.

FINANCIAL, LEGAL & ACCOUNTING

L. C. Wilds, secretary and treasurer of the ST. LOUIS, SAN FRANCISCO & TEXAS has retired, after 48 years of service. He has been succeeded by **W. O. Moore,** chief clerk to vice-president and general manager. Mr. Wilds began his railroad career with the Frisco of Texas as a cashier in 1904, and in 1910 was promoted to secretary and treasurer. During World War I, he was federal treasurer of seven Texas

W. O. Moore

railroads for the United States Railroad Administration.

Mr. Moore became associated with the Frisco's Texas lines as secretary to the superintendent of the Western division in 1917. After serving in numerous clerical and secretarial positions he was named chief clerk to president in 1930. In 1932 he was appointed chief clerk to vice-president and general manager.

Glenn H. Carlson, general tax agent of the MINNEAPOLIS & ST. LOUIS, has been appointed comptroller, with headquarters as before at Minneapolis, succeeding **George A. Anderson,** vice-president and comptroller, who has been named vice-president in charge of finance.

Aloysius J. Lamprecht, supervisor of the centralized accounting bureau of the WABASH at Decatur, Ill., has been named auditor of disbursements at St. Louis, succeeding **Walter L. Abbott,** who died on December 16, 1952. **Harold D. Blair,** assistant supervisor of the accounting bureau at Decatur, succeeds Mr. Lamprecht. Mr. Lamprecht joined the Wabash as a clerk in its St. Louis accounting offices. He held a number of positions in the accounting department before being promoted to his Decatur assignment in 1947.

James B. Angell, real estate and tax commissioner of the CHICAGO, ROCK ISLAND & PACIFIC, has retired, and been succeeded by **Rollin W. Roach,** former assistant commissioner. Mr. Angell joined the Rock Island 45 years ago as a clerk in the real estate and tax office, after graduating from the University of Minnesota law school.

Mr. Roach is a graduate of Texas Christian University. He joined the Rock Island in 1937 at Fort Worth, Tex., and became assistant real estate and tax commissioner at Chicago in 1950.

Herman P. Kies has been appointed auditor freight accounts of the AKRON, CANTON & YOUNGSTOWN at Akron, Ohio, succeeding **C. R. Wilson,** who, at his own request, has retired after 55 years of railroad service, 35 years of which have been with the AC&Y.

M. C. Schultz has been appointed auditor of freight accounts of the ELGIN, JOLIET & EASTERN at Chicago, succeeding **J. H. Dehen,** deceased.

Frank A. MacEwen, assistant to comptroller of the ERIE, has been promoted to assistant comptroller, with headquarters as before at Cleveland, succeeding **George W. Oakley,** whose promotion to comptroller was reported in *Railway Age* January 5, page 53. **Jasper Van Hook,** general accountant, has been named assistant treasurer, succeeding **William H. Meyn,** whose promotion to treasurer was also noted in *Railway Age* January 5. **Michael J. Foli,** special accountant in the comptroller's office, succeeds Mr. MacEwen as assistant to comptroller.

Mr. MacEwen began his career as an office boy with the Erie in 1909 and advanced through various positions in the comptroller's office. He has been assistant to comptroller since last year.

Albert W. Tuttle, assistant real estate agent of the READING at Philadelphia, Pa., has retired after more than 49 years of service. **Horace P. Henry** and **Francis V. Flynn** have been named assistant real estate agents.

George J. Gunning, chief clerk to auditor of freight accounts of the SOUTHERN, has been promoted to assistant auditor of freight accounts, with headquarters as before at Atlanta, Ga., succeeding **Ernest N. Byrd,** who has been promoted to assistant auditor of overcharge claims.

M. I. LaBelle, assistant comptroller of the SOO LINE and the DULUTH, SOUTH SHORE & ATLANTIC, has been appointed comptroller of both roads, with headquarters as before at Minneapolis, Minn., succeeding **J. B. Donnelly,** who has retired after 53 years of railroad service, the last 32 of which were with the Soo Line. **A. T. Haugen,** auditor of disbursements, has been appointed assistant comptroller, disbursements and general. **J. E. Bertelsen,** general auditor, has been appointed assistant comptroller, revenues and research. The position of general auditor has been abolished. **R. M. Olson,** assistant to comptroller, has been appointed auditor of disbursements, succeeding Mr. Haugen. **C. A. Johnson,** assistant auditor of disbursements, has been appointed assistant to comptroller, succeeding Mr. Olson. **E. F. Fisher** has been named auditor of pay rolls, succeeding **F. Hallen,** who has retired under the company's pension rules.

OPERATING

H. W. Ackerman has been appointed trainmaster of the Buffalo division of the NEW YORK CENTRAL and **W. M. Jackson** has been appointed trainmaster of the St. Lawrence division.

E. L. Keller has been appointed trainmaster of the CHICAGO JUNCTION and the CHICAGO RIVER & INDIANA, with headquarters at Chicago.

George A. Nolte, freight agent of the ST. LOUIS SOUTHWESTERN at Dallas, Tex., has been appointed manager, freight protection, merchandise and station service at Tyler, Tex.

With election of **Karl A. Borntrager** as vice-president, operations and maintenance, of the NEW YORK CENTRAL (*Railway Age,* December 15, 1952, page 7, and December 22, page 59), and retirement of **John H. Spooner** as superintendent of the Toledo division, **A. W. Laskoske,** superintendent at Detroit, becomes general manager of the Michigan Central district, to succeed Mr. Borntrager. **William H. Shearer,** assistant superintendent at Jackson, Mich., succeeds Mr. Laskoske, while **Ernest C. Johnson,** superintendent at Chicago, is transferred to Toledo to succeed Mr. Spooner. **Donald B. Fleming,** assistant superintendent at Springfield, Ohio, succeeds Mr. Johnson. The following have been named assistant superintendents: **Stanley H. Lijewski** at Detroit; **Wendell O. Holderby** at Jackson; **Fred L. Coverston** at Springfield, Ohio; and **John Dring** at East St. Louis, Ill. **William R. Horton,** trainmaster at Englewood, Ill., has been appointed assistant to general manager at Indianapolis, succeeding Mr. Holderby. **R. I. Geary** has been appointed trainmaster of the Western division at Englewood and **C. J. Meyer** has been ap-

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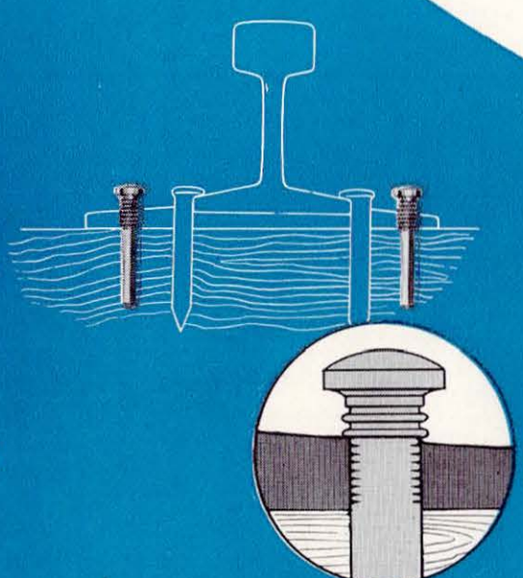

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pointed trainmaster of the Indiana division at Riverside, Cincinnati, Ohio.

Mr. Spooner attended Dennison (Ohio) Business College and entered railroad service as a clerk on the Pennsylvania at Pittsburgh, joining the NYC in 1909 as a statistician on the former Toledo & Ohio Central at Columbus, Ohio. He subsequently served as chief clerk to superintendent of that road and later to the general manager, before being appointed trainmaster at Fultonham in 1922. In 1926 he was appointed terminal trainmaster of the NYC at Toledo and in 1942 was further promoted to assistant superintendent of the NYC at Columbus. He became superintendent at Columbus in 1945 and was transferred to Toledo in 1946.

E. M. Benson, assistant to vice-president, Eastern departments, of the RAILWAY EXPRESS AGENCY, has been appointed general manager, Gulf department, at Atlanta, Ga. **M. S. Cogan,** assistant general manager of the New York City department, has been appointed general manager of the Mississippi Valley department at St. Louis. **J. A. Papa,** superintendent of the Los Angeles division, has been appointed general manager of the Midwest-Texas department at Houston, Tex. **G. Y. Reed,** general manager of the Texas department at Houston, has retired after 50 years of express service. Mr. Benson and Mr. Cogan succeed **Stanley F. Pitcher** and **N. R. Johnson,** who have been appointed, respectively, vice-presidents of REA's Southern and Western departments.

TRAFFIC

F. C. Reisse, traveling freight agent of the CHICAGO, BURLINGTON & QUINCY, at Chicago, has been appointed general agent at Philadelphia.

George H. Kronberg, traveling freight and passenger agent of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC, has been named district freight agent at Washington, D.C.

The SOUTHERN PACIFIC has opened a new freight and passenger office in the Majestic building, Milwaukee, Wis. **Martin S. Vogel,** district freight agent at Chicago, has been promoted to assistant general agent, freight department, at the new office, while **Otha C. Grant,** passenger representative at Chicago, has been named assistant general agent, passenger department, at Milwaukee. **W. H. Herrin,** assistant to freight traffic manager at Chicago, has been promoted to general freight agent—rates, there; **Harry W. Larson,** traveling freight and passenger agent at Detroit, becomes district freight agent at Chicago, succeeding Mr. Vogel; and **H. E. Hinshaw,** district freight agent at Sacramento, Cal., has been named assistant general freight agent at Portland, Ore., succeeding **F. J. Zika,** whose appointment

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*Los Angeles 54 — 210 Anderson St.
Angelus 3-7282 • C. V. Kelly
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*Sacramento 1 — 1900 14th Street
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*San Diego 1 — 720 State Street
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Hartford 33-2631 • D. E. Sullivan
*New Haven 7 — 25 Union Street
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E. F. Berger

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Adams 4800 • A. C. Eastburn

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Miami 30 — 835 Northwest First Ave.
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Tampa 2-7791 • R. S. Robinson

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G. Sweeney
*Savannah 1 — 2601 Whitaker St.
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*Indianapolis 2 — 1300 W. 16th St.
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Davenport 3-2769 • E. L. Johnson
Des Moines 9 — 24 Eleventh Street
Des Moines 3-8614 • D. M. Hitchcock

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Wichita 7-1366 • E. F. Linnerson

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*Louisville 8 — 624-628 Myrtle St.
Calhoun 5411 • C. H. Brown
*Paducah — 418 Guthrie Building
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Baton Rouge — 2442 Ted Dunham Ave.
Baton Rouge 4-7093 • S. M. Lawrason
*New Orleans 13 — 1116 Magnolia St.
Canal 6263 • L. J. Olivier
Shreveport — 90 Fannin St.
Shreveport 4-6645 • A. W. Wheeler

MAINE
*Portland 3 — Center & Commercial Sts.
Portland 3-1761 • H. J. Scully

MARYLAND
*Baltimore 2 — 100 South Street
Saratoga 5050 • J. D. Rhoads

MASSACHUSETTS
*Boston 16 — 287 Columbus Avenue
Kenmore 6-4567 • G. J. Pink
Springfield 4 — 32 Patton St.
Springfield 7-4373 • H. O. Edoff
Worcester 5 — 108 Grove Street
Worcester 6-4311 • H. G. Rappel

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Temple 1-5500 • C. R. Carlson
W. E. Watson
P. L. Gundy
*Flint 6 — 2424 Kansas Ave.
Flint 2-4101 • C. L. Powell
Grand Rapids 2 — 432 Monroe Ave., N. W.
Glendale 1-2561 • H. G. Cook
*Lansing 10 — 421 E. Elm Street
Lansing 4-5434 • W. T. Bronson

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*Duluth 2 — 320 West 1st Street
Melrose 6645 • F. A. Sjogren
*Minneapolis 15 — 824 South Fourth St.
Geneva 1621 • E. J. Aubrecht
*St. Paul 1 — 464 Robert St.
Cedar 7491 • L. E. Luckman

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*Cleveland 14 — 1010 Rockwell Ave.
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Oklahoma City 3-9351 • W. A. Arthur
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Tulsa 6-1151 • F. L. Cummings

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Bethlehem 1-0657 • W. L. Hall
Harrisburg — 1039 S. Thirteenth St.
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Philadelphia 7 — 910 Cherry St.
Walnut 2-5405 • W. W. Frazee, Jr.
D. M. Antrim
*Pittsburgh 12 — 900 Ridge Ave.
Allegheny 1-4100 • J. G. McNeely
R. F. Grossett
Reading — 22 South Third Street
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Knoxville 3-6171 • C. C. McGraw
*Memphis 3 — 484 South Front Street
Memphis 37-3421 • W. J. Berry
*Nashville 3 — 125 16th Ave. No.
Nashville 6-7161 • Herschel Hall

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Amarillo 2-6778 • L. P. Bell
Austin — 214 E. 3rd St.
Austin 8-5674 • George W. Cox
Beaumont — 1070 Fannin St.
Beaumont 2-8484 • L. A. Haley
Corpus Christi — 1311 Agnes St.
Corpus Christi 4-6374 • R. E. Broyles
*Dallas 1 — 717 Latimer St.
Randolph 6454 • A. Frank Hamm
El Paso — 427 West San Antonio St.
El Paso 3-7561 • C. Newbill
*Forth Worth 7 — 1107 Foch St.
Edison 4523 • Vernon Young
*Houston 3 — 1702 Cullen Blvd.
Atwood 8-4571 • W. P. Worley, Jr.
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Norfolk 2-2727 • John Horne
T. A. Young
*Richmond 19 — 10 S. 6th St.
Richmond 7-3491 • E. C. Toms
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Roanoke 3-3615 • W. E. James

WASHINGTON
*Seattle 4 — King & Occidental Sts.
Mutual 0123 • E. C. McEachron
*Spokane 8 — 152 South Post St.
Riverside 3151 • W. A. Sparks
*Tacoma 1 — 2112 "A" Street
Main 0166 • R. J. Franzen

WEST VIRGINIA
Charleston — 600 Chamber of Commerce Building
Charleston 6-0411 • John T. Young

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Milwaukee 2 — 180 No. Jefferson St.
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as general freight agent at Portland was reported in *Railway Age* December 29. **O. V. Gibson,** general agent at Salt Lake City, has been appointed district freight agent at Sacramento; **C. F. Smurr,** district freight agent at Long Beach, Cal., moves to Salt Lake City as general agent; and **J. E. Blackburn,** general agent of the PACIFIC ELECTRIC, at Long Beach, succeeds Mr. Smurr as SP district freight agent there.

The NASHVILLE, CHATTANOOGA & ST. LOUIS has announced retirement of the following officers, all of whom have completed 50 or more years of service: **J. C. Kirk,** freight traffic manager at Nashville, Tenn.; **J. F. Gaffney, Jr.,** general passenger agent at Nashville; **J. V. McCarty,** general agent at St. Louis; and **H. L. Hanes,** assistant to freight traffic manager at Nashville. Announcement has also been made of promotion of **Donald R. Hackney,** assistant general passenger agent at Nashville, to succeed Mr. Gaffney; **M. E. Sillin,** freight traffic agent at Kansas City, Mo., to succeed Mr. McCarty; **F. A. Burke,** general freight agent, rates and divisions, at Nashville, to replace Mr. Kirk; and **S. M. Dickerson,** assistant general freight agent, rates, at Nashville, to succeed Mr. Hanes. **J. H. Sutton,** assistant general freight agent, service and sales, at Nashville, succeeds Mr. Burke; **P. C. Swann,** general agent at Louisville, Ky., becomes assistant general freight agent, service and sales, at Nashville, succeeding Mr. Sutton; **W. B. Scott,** freight traffic agent at Louisville, succeeds Mr. Swann; **J. E. Hart** replaces Mr. Scott, and **W. K. Wilson** succeeds Mr. Dickerson. **A. E. Lee** has become freight traffic agent at Kansas City. The position of assistant general passenger agent at Nashville has been abolished.

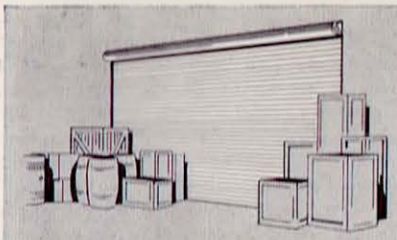
F. H. Sanders has been appointed general agent of the ATLANTIC COAST LINE at Montgomery, Ala.

John A. Barrett, district passenger agent of the WABASH at both Philadelphia and Pittsburgh, has been promoted to general passenger agent at St. Louis.

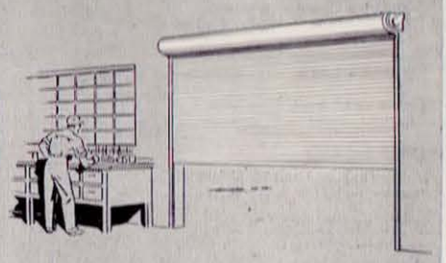
J. J. Gabriel, manager of mail and baggage traffic of the GREAT NORTHERN, has retired. **D. M. Eichten,** assistant manager of that department, succeeds him.

G. W. Ploudre, general agent of the GREAT NORTHERN at Dallas, Tex., has been appointed general agent, freight traffic department, at Seattle, Wash. **H. T. McBride,** traveling freight agent at Dallas, succeeds him.

R. G. Bucklin has been appointed general agent of the CHICAGO, BURLINGTON & QUINCY at Dallas, Tex., succeeding **T. V. Murray,** who has retired. **H. P. Parker** has been appointed gen-



All space in and around Kinnear-equipped doorways is fully usable at all times — both inside and outside the opening.



Work space and window areas can continue right up to the jambs of Kinnear Rolling Doors.

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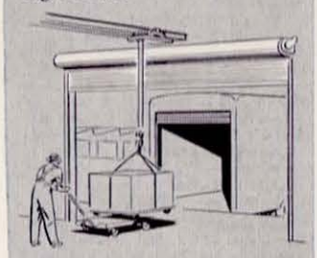

Ceiling space remains clear, for maximum use of cranes, conveyors, or hoists in and around door areas. Kinnear Doors can also be arranged to accommodate crane tracks extending through opening.

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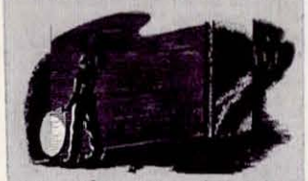

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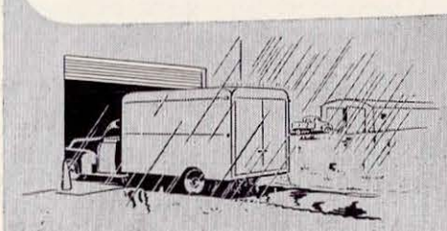
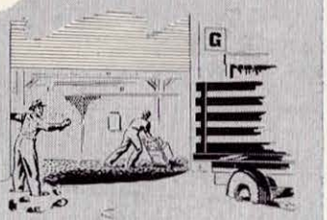


Wind is never a hazard to Kinnear Rolling Doors. The rugged steel slats are anchored in steel jamb grooves from floor to lintel.



The vertical action of Kinnear Rolling Doors is not blocked by snow, ice, gravel, or uneven ground.

eral agent at Houston, to succeed Mr. Bucklin. Mr. Parker was traveling freight and passenger agent at Dallas.

Kenneth L. Guyston, foreign freight agent of the BOSTON & ALBANY (NEW YORK CENTRAL), at Boston, has been appointed division freight agent at Springfield, Mass., succeeding **Chester W. Cummings,** who has retired after 38 years of service.

Fred B. Lunt, who has occupied the dual role of manager of the highway division of the BANGOR & AROOSTOOK and superintendent of its dining car division, at Bangor, Me., has been transferred to the freight traffic department, where he will handle sales promotion. Mr. Lunt's highway division duties are being assigned to **Arnold Travis,** assistant in the general manager's office. **E. F. Kimball,** chief clerk in the freight traffic department, has been appointed assistant general freight agent.

Herbert E. Wilson, Jr., foreign freight agent of the SOUTHERN, has been appointed general eastern freight agent, with headquarters as before at New York. **Robert L. Crawford,** district freight agent at New York, succeeds Mr. Wilson as foreign freight agent. **Frank W. Wiley,** commercial agent, has been appointed district freight agent, with headquarters remaining at New York.

Mr. Wilson was born at Kinston, N.C., on May 7, 1920, entered the service of the Southern in August 1939 as chief clerk to commercial agent at Durham, N.C., and subsequently served in clerical and stenographic capacities at various points. He was appointed commercial agent at New York on November 1, 1946, and became district freight and passenger agent in 1947. Mr. Wilson served with the U.S. Army in World War II, and re-entered military service in September 1950. He returned to the Southern in September 1952 as foreign freight agent at New York.

Lon M. Dunford has been named district freight agent of the LOUISVILLE & NASHVILLE at Tulsa, Okla. **R. J. Flanagan,** freight traffic agent at Louisville, Ky., has been transferred to St. Louis, and **J. M. Brock,** freight traffic agent at Pensacola, Fla., has been transferred to the newly created position of freight traffic agent at Houston, Tex.

Arthur J. Crookshank, assistant to assistant vice-president of freight traffic of the NEW YORK CENTRAL, has been promoted to assistant general freight traffic manager, with headquarters as before at New York.

Berne Levy, general freight agent of the ATCHISON, TOPEKA & SANTA FE at San Francisco, retired on December 31 after more than 50 years of service with the company. Mr. Levy first joined

the Santa Fe in 1902 as an office boy in Los Angeles. After serving in a number of clerical capacities, he became chief tariff clerk in 1910. From 1921 through 1936 he served as assistant general freight agent at San Francisco, and for three years thereafter was assigned to the road's department of highway motor transport as assistant general manager. He became general freight agent at San Francisco in September 1939.

Frederick O. Kansorka has been named general agent of the UNION PACIFIC at Detroit. **A. K. Hinckle** has been appointed general agent at Walla Walla, Wash., succeeding **J. H. Cunningham,** who has retired under the company's pension plan, after 42 years of service.

V. G. Wright, general freight agent of the COLORADO & SOUTHERN at Denver, has been appointed freight traffic manager at that point.

Henry F. Heck, assistant general agent of the ERIE, has been appointed general agent, with headquarters as before at Washington, D.C., succeeding **William J. Murray,** who has retired after more than 40 years of service.

Charles M. Hazlehurst, general industrial agent of the SEABOARD AIR LINE at Norfolk, has been transferred to New York to a newly established office at 630 Fifth avenue. **Joseph J. Cragin,** secretary to vice-president in charge of freight traffic at Norfolk, has been appointed industrial agent at Atlanta, a new position.

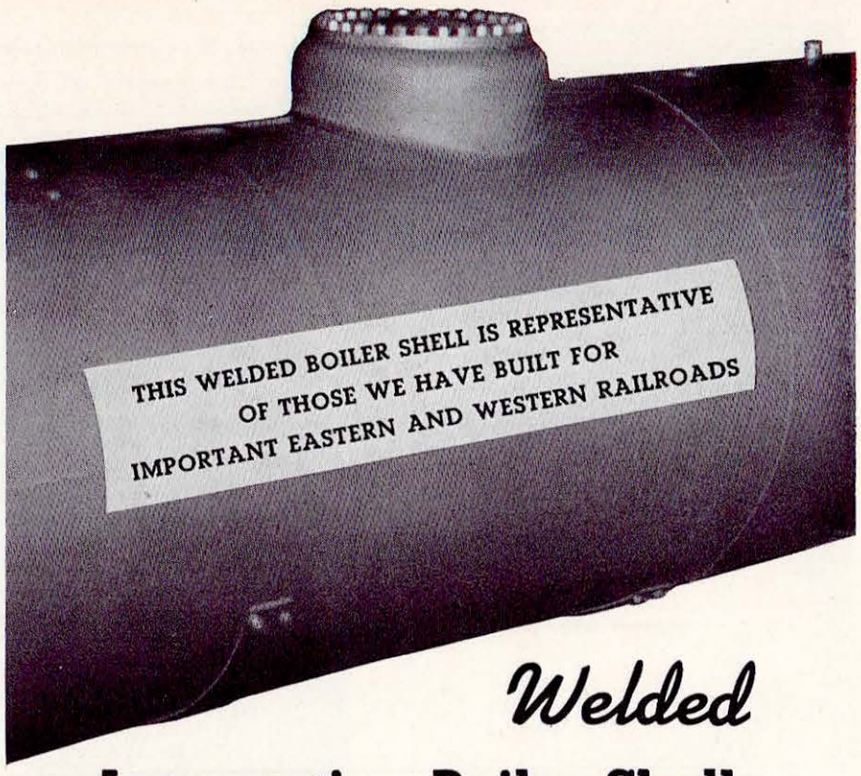
H. G. Walker, assistant to freight traffic manager of the SEABOARD AIR LINE, has been promoted to assistant freight traffic manager, with headquarters as before at Norfolk. Mr. Walker was born at Portsmouth and began his career with the Seaboard in 1918 in the engineering department at Norfolk. Two years later he transferred to the freight traffic department, where he has been serving in positions of increasing responsibility. He became assistant to freight traffic manager in 1943.

MECHANICAL

J. Page Walker has been appointed assistant mechanical engineer of the LOUISVILLE & NASHVILLE at South Louisville, Ky.

Robert L. Baker has been appointed assistant to superintendent motive power of the BESSEMER & LAKE ERIE at Greenville, Pa.

Gordon E. Spooner has been promoted to chief diesel inspector of the CENTRAL VERMONT, with system jurisdiction. Mr. Spooner, who has been in the employ of the CV since 1922, will have charge of maintenance of diesel



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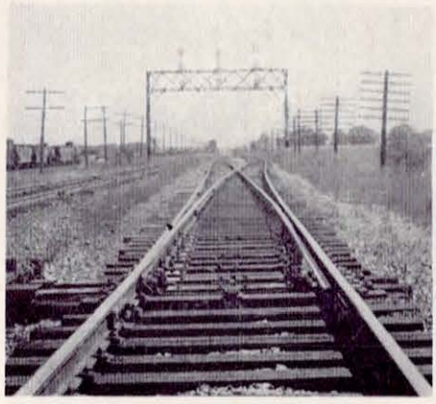

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equipment and all diesel instruction activities.

D. F. Dunsmore, assistant electrical engineer of the CHESAPEAKE & OHIO, has been appointed electrical engineer, with headquarters as before at Richmond, Va., succeeding **C. W. Nelson,** retired. Mr. Dunsmore was born at Hinton, W.Va., January 10, 1901, and began his career in 1917 as an electrician helper and lineman with the Hinton Water, Light & Supply Co. In 1921 he became a partner in the Hinton Electric Company, electrical contractors. He entered railroad service in 1923 as road electrician with the C&O and subsequently served as road lead electrician, road foreman

D. F. Dunsmore

electrician and road electric foreman. Mr. Dunsmore was appointed assistant electrical engineer at Richmond in 1946.

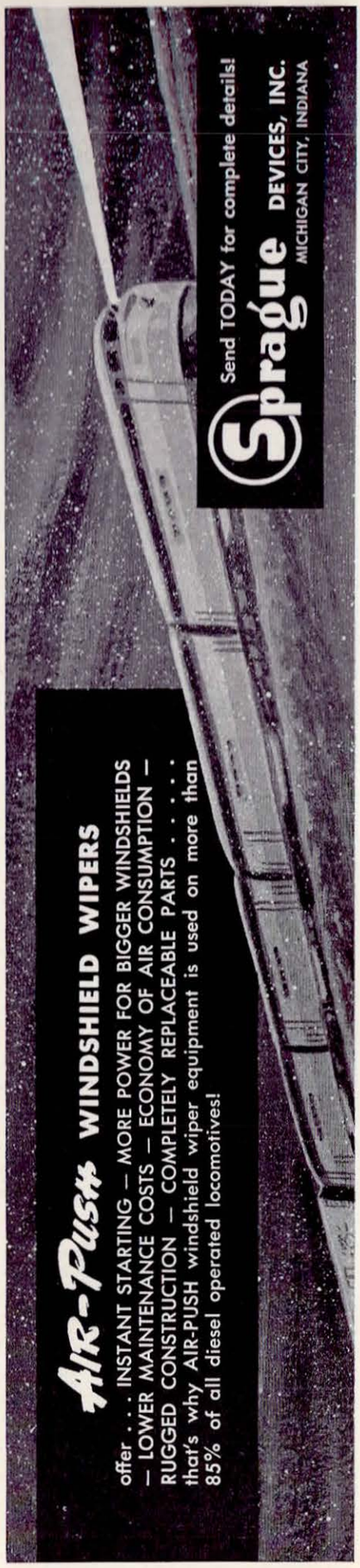
Mr. Nelson was born at Copenhagen, Denmark, December 23, 1887, and began his career in December 1904 as a clerk in the stores department of the Pullman Company. He later served the C&O and Pullman intermittently in various capacities in their electrical departments. He was appointed supervisor of train control of the C&O in May 1923, supervisor of train control and train lighting in May 1929, and electrical engineer in June 1938.

PURCHASES & STORES

G. L. Tresch, buyer for the CHICAGO, ROCK ISLAND & PACIFIC, has been appointed assistant purchasing agent, and his former position has been abolished. **Henry K. Johnson** has been appointed stationer, succeeding **W. W. Griswold,** who has retired; **Arnold Miller** has been appointed stationery storekeeper, succeeding Mr. Johnson; and **B. F. Finger** has been appointed chief tie inspector, succeeding **E. D. Thompson,** who has retired.

Arthur J. Ryan, assistant to vice-president of purchases and stores of the NEW YORK CENTRAL, has been promoted to fuel purchasing agent at New

(*Continued on page* 264)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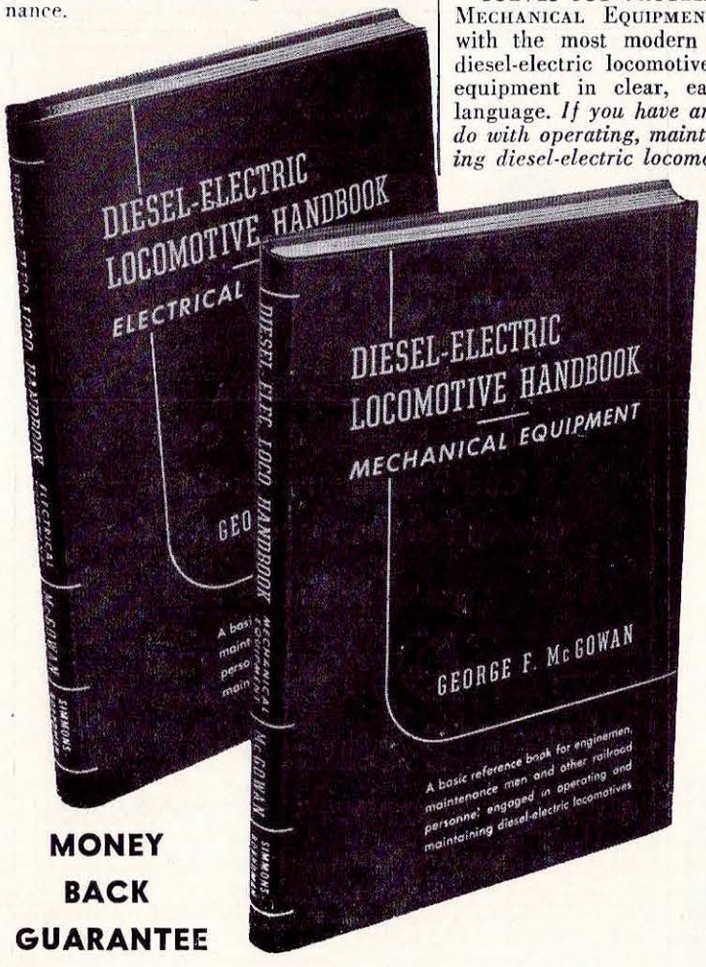

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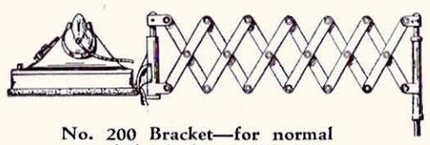

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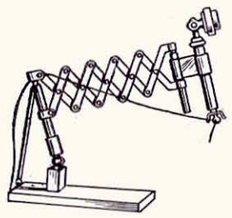

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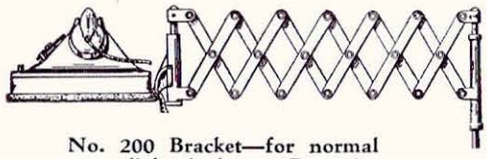

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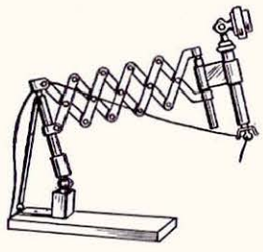

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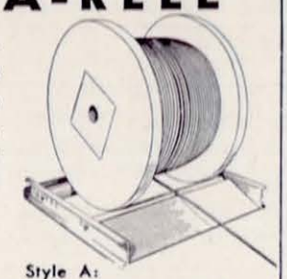

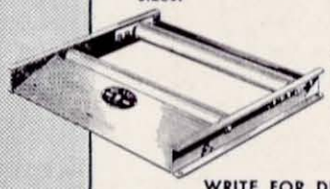

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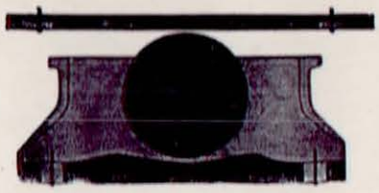

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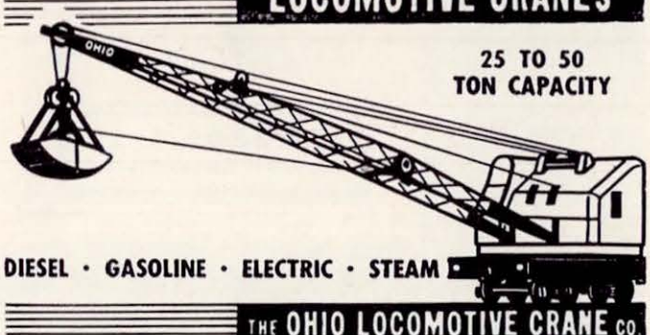

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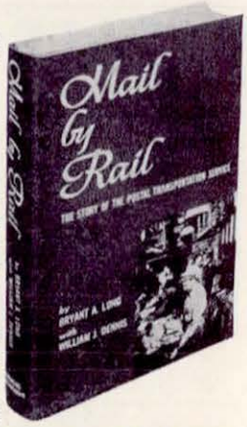

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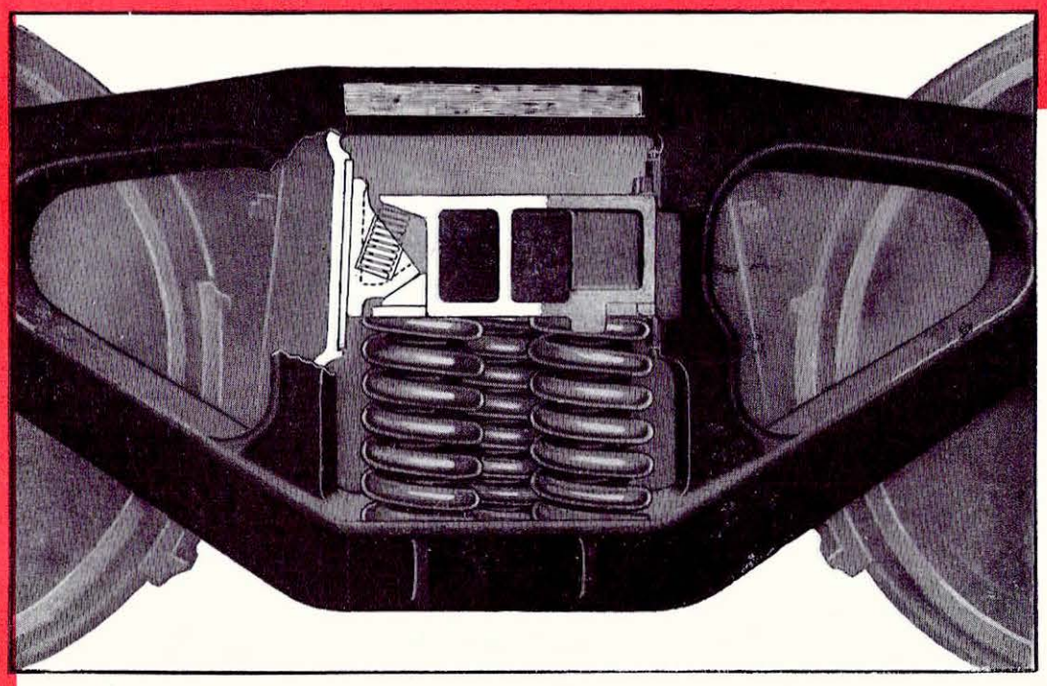

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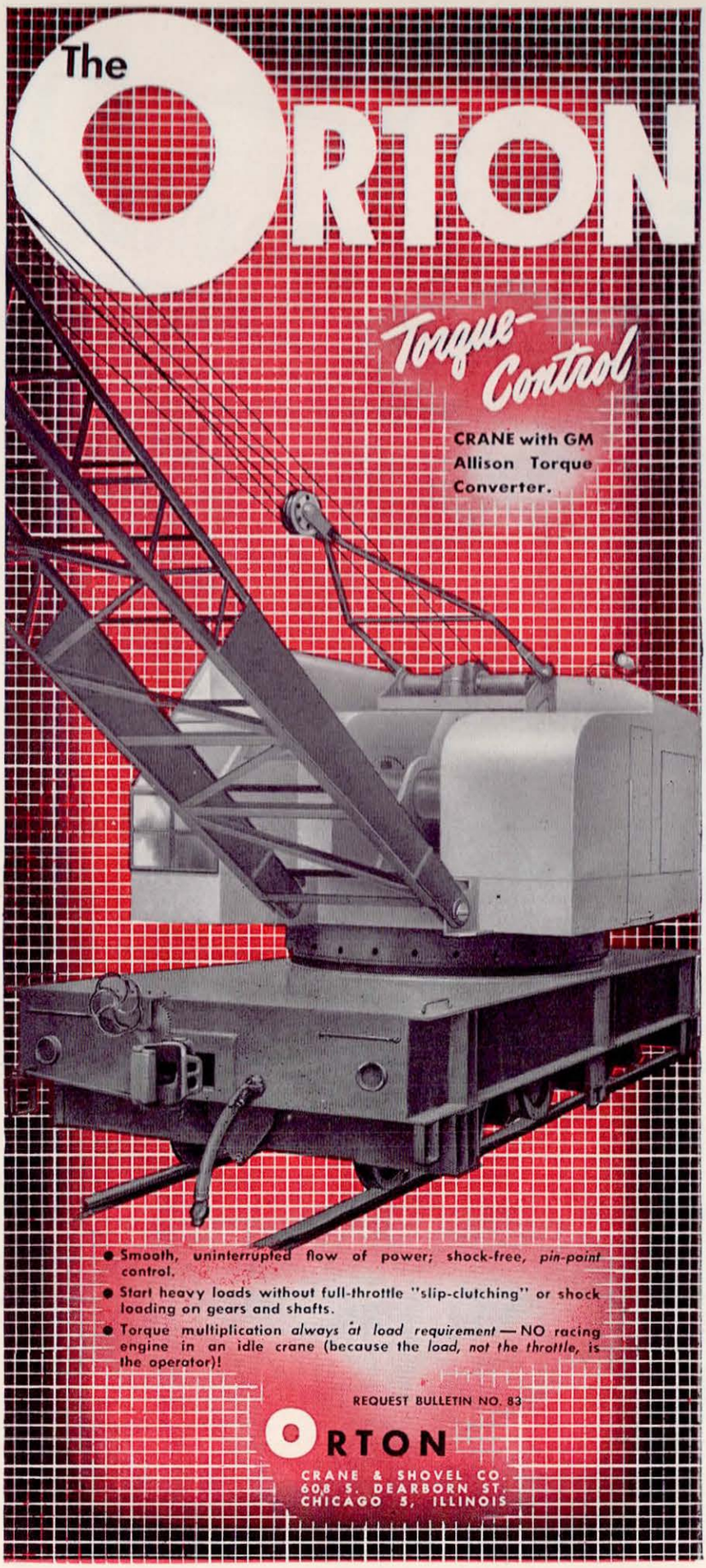
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(Continued from page 258)

York, succeeding **Edwin S. Bonnet,** who has retired, after 35 years of service.

W. A. Bamford, general storekeeper of the BANGOR & AROOSTOOK, who has been acting purchasing agent since November, has been appointed purchasing agent, with headquarters as before at Derby, Me., succeeding **E. W. Peterson,** who retired on January 1. The offices of purchasing agent and storekeeper have been consolidated. **R. B. Baldwin,** assistant to vice-president in charge of freight traffic at Bangor, Me., has been appointed assistant to purchasing agent. Mr. Peterson was born at Boston, Mass., on March 12, 1890, and entered railroad service in July 1908 as junior clerk and messenger on the Boston & Albany. He later served in various clerical capacities with that road, becoming chief clerk to general storekeeper in 1917. Mr. Peterson joined the Bangor & Aroostook in March 1920 as general storekeeper, and became purchasing agent on October 1, 1946.

Jacob A. Bobb has been appointed acting district storekeeper of the READING at Reading, Pa., succeeding **J. William Trump,** who has been named acting superintendent, Reading Terminal Market, replacing **C. B. Marsh,** granted leave of absence.

W. H. Rose, assistant to general purchasing agent of the SEABOARD AIR LINE, has been promoted to assistant general purchasing agent, with headquarters remaining at Norfolk, Va. A native of Sumter, S.C., Mr. Rose began his career with the Seaboard in 1920. He has been identified with the road's purchasing department for many years and has held positions of increasing responsibility, serving at one time as office assistant to the president. He was appointed assistant to general purchasing agent in January 1949.

ENGINEERING

The SOUTHERN PACIFIC has announced a number of promotions in its engineering department. **William M. Jaekle,** assistant engineer, maintenance of way and structures, has been appointed assistant chief engineer with headquarters at San Francisco. **Joseph A. Holmes,** assistant construction engineer at San Francisco, has been named construction engineer at that point. **Roy B. Chapman,** supervisor of work equipment and welding, has been appointed general superintendent of maintenance of way shops and equipment, also at San Francisco. **Harry M. Williamson** becomes assistant engineer, maintenance of way and structures at San Francisco, succeeding Mr. Jaekle, while **Godfrey J. Lyon** has been appointed division engineer at Portland, Ore., to succeed Mr. Williamson. **Victor R. Cooledge**

has been appointed assistant engineer of bridges at San Francisco.

Robert J. Crane, assistant chief engineer, Eastern lines, of the NEW YORK CENTRAL, has been appointed chief engineer of those lines, including the affiliated BOSTON & ALBANY, with headquarters as before at New York. Mr. Crane succeeds **George A. Noren,** who has retired after more than 40 years of service with the Central. **Clifford T. Gunsallus,** district engineer of the B&A at Boston, replaces Mr. Crane as assistant chief engineer at New York.

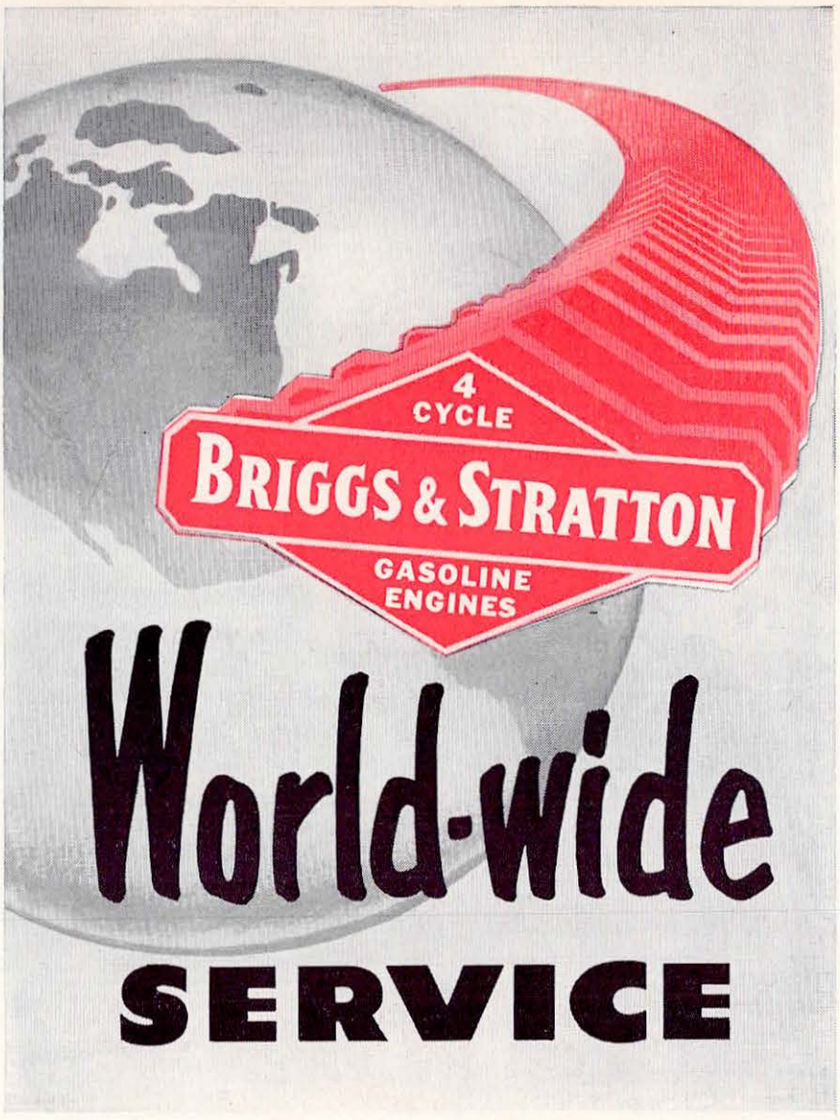
Mr. Crane was born at **Brewster,** N.Y., on February 21, 1890, and at-

Robert J. Crane

tended New York University and Bucknell University (C.E., 1914), taking Columbia University extension courses during 1919 and 1920. He began his career as assistant engineer, Board of Water Supply, New York, in 1913, becoming transitman for the Bronx Parkway Commission in 1915. Entering railroad service in 1916 as designer for the NYC, at New York, Mr. Crane

George A. Noren

subsequently served as assistant engineer at New York, becoming special engineer in 1941. From 1942 to 1945 he served as lieutenant colonel and colonel, U.S. Army, Military Railway Service, in Africa, Italy and the Euro-



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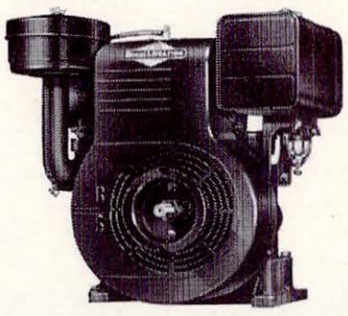

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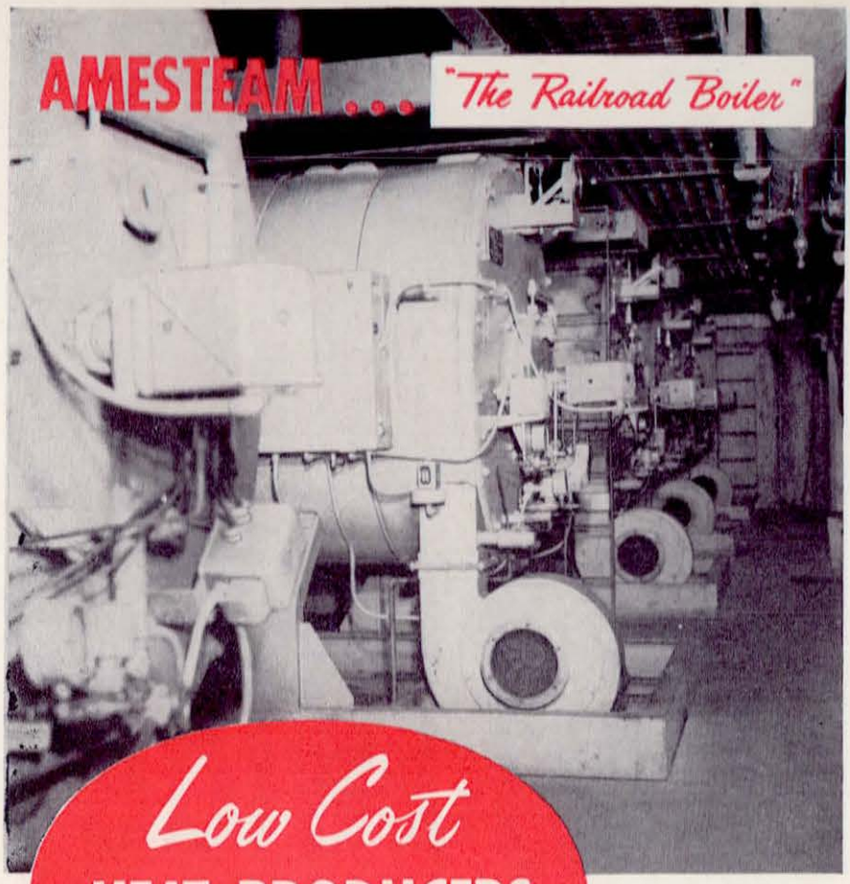

New York Central's pattern for progress in its modern new Stanley Diesel Shop at Toledo, Ohio, includes a battery of five compact, highly-efficient AMESTEAM Generators.

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pean Theatre of Operations. On December 1, 1945, Mr. Crane returned to the NYC as assistant chief engineer at New York.

Mr. Noren was born at New Britain, Conn., on April 6, 1886, and attended the University of Pennsylvania (1910). He entered railroad service in June 1910 as rodman with the Pennsylvania and in October 1911 became assistant engineer for the Monterey Electric Railway, Light & Power Co. at Monterey, Mexico, later engaging in private practice in general engineering in Monterey. Mr. Noren joined the NYC in 1912 as assistant engineer on the Hudson River division, and subsequently served as assistant engineer on the Hudson River Connecting; resident engineer on station improvements at Poughkeepsie; assistant district engineer of the Central district; engineer of grade crossings at New York; designing engineer; engineering assistant to vice-president at New York; and engineering assistant to executive vice-president. He was appointed chief engineer at New York in 1945.

Theodore W. Pinard, chief engineer of the LONG ISLAND at Jamaica, N.Y., has retired.

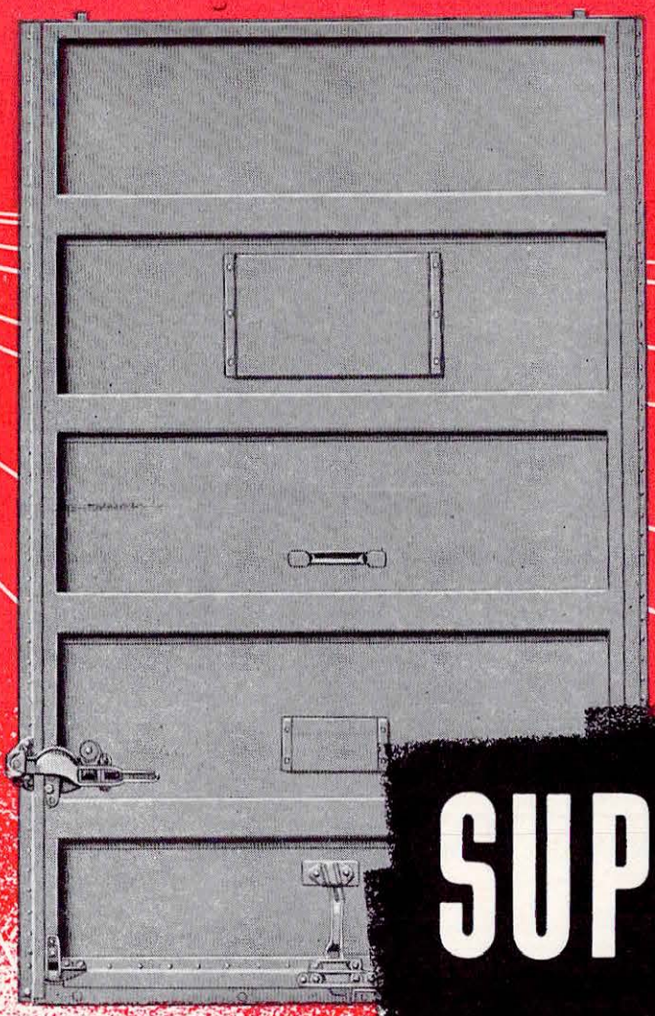
James E. Wiggins, Jr., assistant engineer of water supply of the SOUTHERN SYSTEM, has been promoted to engineer of water supply, with headquarters remaining at Washington, D.C. Mr. Wiggins succeeds **A. B. Pierce,** retired. Mr. Pierce was born at Washington December 3, 1882, and entered railroad service in 1902 as architectural draftsman with the Southern. In 1916 he became track engineer and later that year was appointed engineer of water supply of the system.

SPECIAL

Leo A. Brown, general advertising agent of the Wabash, has been named director of advertising, with headquarters as before at St. Louis.

OBITUARY

Charles Henry Bilty, who retired in 1943 as chief mechanical engineer of the CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC, died recently in Milwaukee, Wis., after a long illness.



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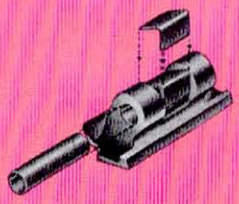

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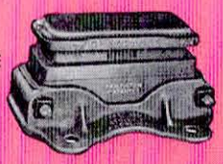

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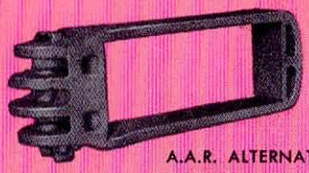

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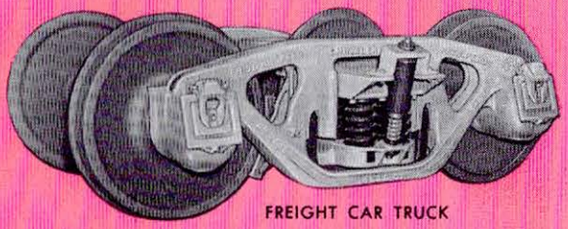
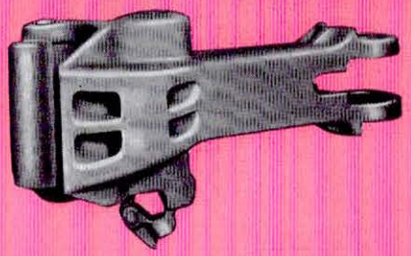
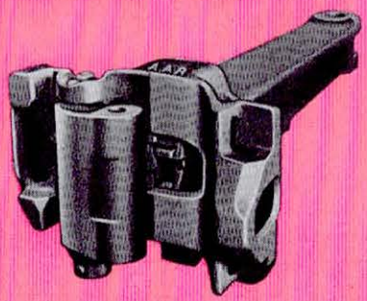


FREIGHT CAR TRUCK

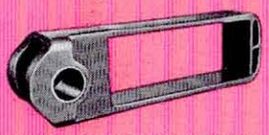


A.A.R. STANDARD E COUPLER WITH ALTERNATE STANDARD SWIVEL SHANK

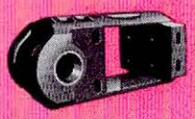


A.A.R. TYPE H TIGHTLOCK COUPLER

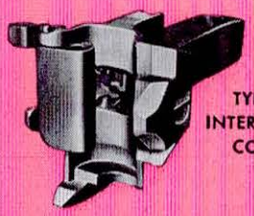
RADIAL CONNECTION



YOKE—STANDARD POCKET, FOR CONVENTIONAL DRAFT GEAR APPLICATION



YOKE—STANDARD POCKET, FOR TWIN DRAFT GEAR APPLICATION



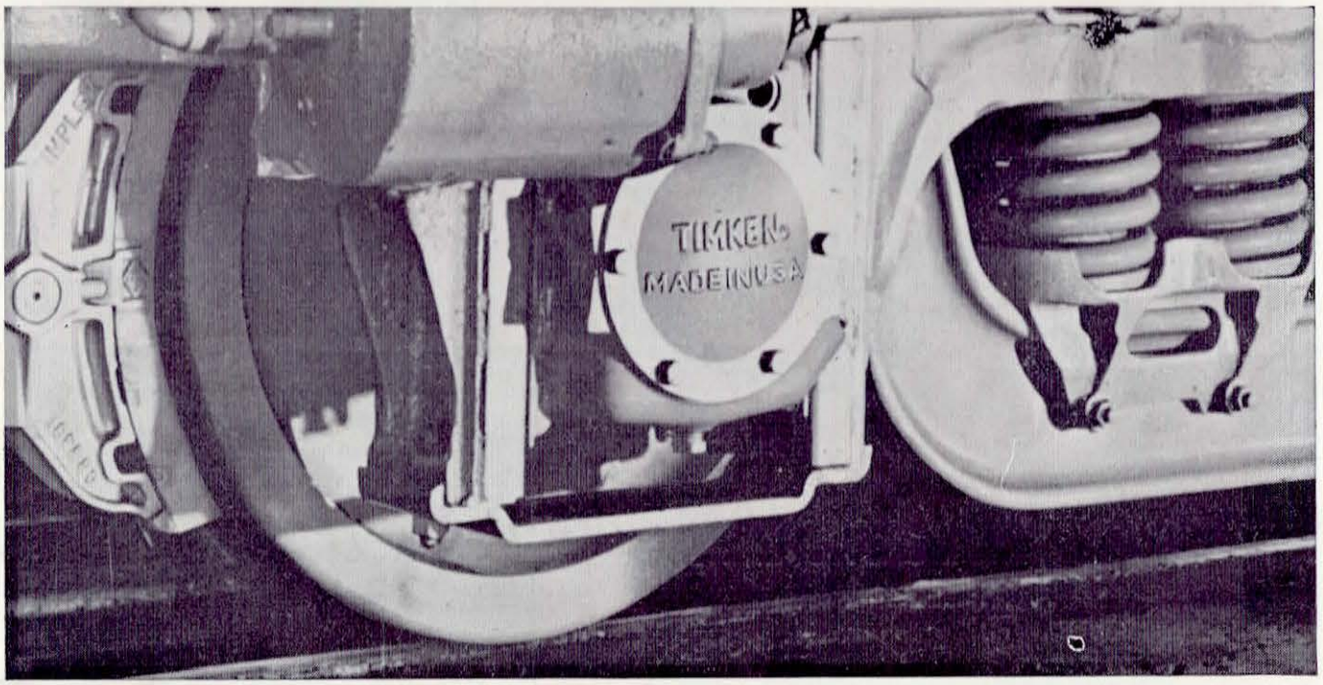
TYPE "F" INTERLOCKING COUPLER

THE SYMINGTON-GOULD CORPORATION

Works: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • *In Canada:* ADANAC SUPPLIES, LTD., Montreal, Que.

Grease TIMKEN® bearings at wheel-turning;



forget 'em till the next!

OPERATING tests on passenger trains in regular service prove it! You can grease Timken® bearings on passenger cars and diesels at one wheel-turning and they'll safely go until the next without additional lubricant!

Four leading railroads have already switched from oil to grease for their Timken bearing equipped passenger cars. One of these railroads ran grease-lubricated Timken bearings over 200,000 miles without adding lubricant. Another dozen railroads are also coming up with favorable results in their wheel-turning to wheel-turning tests of grease-lubricated Timken bearings.

The switch from oil to grease for Timken bearings means new operating economies to the railroads. They're eliminating the man-hours previously spent to check and add lubricant and they're making savings on the lubricant itself.

You don't need to modify the bearings or buy extra journal parts to convert Timken bearings from oil to grease lubrication. And they're the *only* railroad journal bearings which can consistently go a full wheel-turning period on AAR-approved grease without additional lubricant!

For more information about how you can get the cost-saving advantages of grease-lubricated Timken bearings, write The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

TIMKEN
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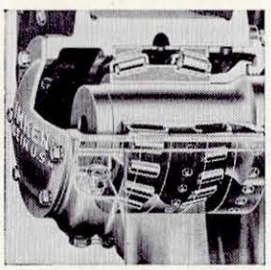
TAPERED ROLLER BEARINGS



THE ONLY RAILROAD JOURNAL BEARINGS THAT CONSISTENTLY GO FROM WHEEL-TURNING TO WHEEL-TURNING ON AAR-APPROVED GREASE!

NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◎ AND THRUST →◎← LOADS OR ANY COMBINATION ✳